

CONTRACT DOCUMENTS
and
TECHNICAL SPECIFICATIONS

for

BOUSH STREET GARAGE
ELEVATOR MODERNIZATION

APRIL 2012



***City of
Norfolk***

Department of Public Works

7th Floor, City Hall Building
Norfolk, Virginia 23510
(757) 664-4631

CITY OF NORFOLK
BOUSH STREET PARKING GARAGE
ELEVATOR MODERNIZATION

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Posted: April 20, 2012

INVITATION FOR BIDS
CITY OF NORFOLK - DEPARTMENT OF PUBLIC WORKS

PROJECT: BOUSH STREET PARKING GARAGE – ELEVATOR MODERNIZATION

Owner: City of Norfolk
Department of Public Works
Room 700, 7th floor, City Hall Building
810 Union Street, Norfolk, VA 23510
Contact: Robert Jackson
Tel: (757) 664-4608 / Fax: (757) 664-4603

A&E: Pace Collaborative
1277 Perimeter Parkway
Virginia Beach, VA 23462

Contact: Mike Lindale
Tel: 499-7223

Sealed bids are to be received in City of Norfolk Public Works Department, Attn: Contracts Office, Room 700, 7th floor, City Hall Building, 810 Union Street, Norfolk, VA 23510 until **2:00 p.m., Tuesday, May 22, 2012** for the above titled Project.

The Work under this project consists of the repair and modernization of (1) hydraulic elevator, (2) traction elevators with associated equipment.

Bidding Documents are available from the Department of Public Works, provided on a CD, upon non-refundable payment of **\$5.00 per set** in the form of a check made payable to Treasurer, City of Norfolk. Cash payments will not be accepted.

A copy of the Bidding Documents will be on file and open to inspection at The Builders and Contractors Exchange, Inc., Norfolk, VA (757-858-0680), The Builders and Contractors Exchange, Inc., Richmond, VA (804-353-8640), McGraw-Hill Construction-Dodge, Richmond, VA (804-343-2701), Reed Construction Data, Norcross, GA (800-467-2860), Valley Construction News, Richmond, VA (804-674-0397), and Hispanic Contractors Association-Carolinas, Columbia, SC (877-227-1680 ext. 8054).

A Bid Bond, certified check, or cashier's check made payable to the Treasurer, City of Norfolk, for 5% of total bid must accompany each bid. State Contractor registration class and number is required on the outside of the envelope. State Contractor registration class and number is required on the outside of the envelope.

The City reserves the right to cancel the bid opening or to reject any or all bids in whole or part, when it is in the best interest of the City. The right to waive informalities and to determine responsiveness of any bid and responsibility of all bidders is reserved to the City.

Withdrawal of bids will be in accordance with Section 33.1-42.1 of the Norfolk City Code and Section 11-54 of The Code of Virginia, 1950 (as amended).

John M. Keifer
Director

The Virginian Pilot – April 22, 2012
DemandStar – April 22, 2012

INSTRUCTIONS TO BIDDERS

1. AUTHORIZATION TO TRANSACT BUSINESS IN THE COMMONWEALTH

(a) Bidder or offeror organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50 to include in its bid or proposal the identification number issued to it by the State Corporation Commission.

(b) Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law shall include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized.

2. SUBMISSION OF BIDS

(a) Make all bids on "Bid Form" and seal in opaque envelope. The name of project, the contractor's name, address, and Virginia Contractor Registration Class and Number shall be placed on the outside of the envelope.

(b) If a contract is for \$120,000.00 or more, or if the total value of all such construction, removal, repair, or improvements undertaken by the bidder within any 12 month period is for \$750,000.00 or more, the bidder is required under Title 54, Chapter 11, Code of Virginia, 1950 (as amended), to show evidence of being licensed as a Class A Contractor. If a contract is \$7,500.00 or more, but less than \$120,000.00, or if the total value of all such construction, removal, repair or improvements undertaken by the bidder within any 12 month period is less than \$150,000, the bidder is required to show evidence of being licensed as a Class B Contractor. If a contract is \$1,000 or more, but less than \$7,500, or if the total value of all such construction, removal, repair or improvements undertaken by the bidder within any 12 month period is less than \$150,000, the bidder is required to show evidence of being licensed as a Class C Contractor. The bidder shall place on the bid above its signature its Virginia Contractor Registration Class and Number. If a contract is less than \$1,000.00, licensure is not required under Title 54, Chapter 11, Code of Virginia, 1950 (as amended).

(c) If bids are submitted by mail, enclose the above noted envelope in a second sealed, opaque envelope and address to: **City of Norfolk, Department of Public Works, Attn: Contracts Office, Room 700, 7th floor, City Hall Building, 810 Union St., Norfolk, VA 23510.** Bids submitted by mail must be received at the above address before the time designated for bid opening.

(d) Fully fill in all blanks in ink or typewritten, and state numbers in both writing and figures. Signatures shall be in longhand with name and title printed below. Bidders shall acknowledge all addenda in spaces provided on the bid form. For unit price contracts, in the event of a discrepancy between the Total Base Bid and the total of the extension of unit prices, the total extension of unit prices governs in determining the bid amount. For unit price contracts, in the event of a discrepancy between the extension of unit prices and the unit prices, the unit prices governs in determining the bid amount.

(e) Interlineations, alterations, and irregularities of any kind may be cause for rejection of the bid. Erasures or any physical changes on the form shall be initialed by the Bidder.

(f) Bidders may withdraw a bid after it has been submitted to the City any time prior to the stipulated time for opening such bids. Withdrawal of bids will be in accordance with Section 33.1-42.1 of the Norfolk City Code and Section 2.2-4330 of the Code of Virginia, 1950 (as amended).

3. EXAMINATION OF SITE

The bidder shall be responsible for having ascertained all pertinent local and existing conditions determinable by

inspection and inquiry both on the site and adjacent thereto, including any other work being performed thereon, and shall include in its bid all cost attendant upon problems arising from said conditions existing at the time of submission of its bid.

Reference is made to the Contract Documents for information relating to reports, explorations, underground facilities, and easements. On request, the owner will provide each Bidder access to the site to conduct such examinations, investigations, explorations, tests and studies as each Bidder deems necessary for submission of a Bid. The Bidder must fill all holes, clean up, and restore the site to its former condition upon completion of such explorations, investigations, tests and studies, and hold the Owner harmless from any damage to property or injury to persons resulting from or arising out of such explorations, investigations, tests, and studies.

4. INQUIRIES, INTERPRETATION AND ADDENDA

Should a bidder find discrepancies in, or omissions from, the drawings or documents, or should it be in doubt as to their meaning, it should at once notify the Owner in writing. The Owner will welcome such inquiries and they will be given consideration. Every interpretation made by the Owner will be in the form of a printed addendum which will be on file in the office of the Owner. Addenda will be sent to each bidder, but it will be the bidder's responsibility to know of, examine and become familiar with all addenda issued. All addenda shall become a part of the Contract Documents. The Owner will not be responsible for any oral instruction.

The submission of a Bid will constitute inconvertible representation by the Bidder that the Bidder has complied with every requirement of this Section, that without exception, the Bid is premised upon the agreement by the Bidder to perform the Work required by the Contract Documents, and applying specific means, methods, techniques, sequence or procedures of construction (if any) that may be shown or indicated or expressly required by the Contract Documents, that the Bidder has given Written Notice to the Owner of all conflicts, errors, ambiguities, and discrepancies that the Bidder has discovered in the Contract Documents and the written resolutions thereof by the Owner is acceptable to the Bidder, and that the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions of performance and furnishing the Work.

5. BID GUARANTEE

Bids shall be accompanied by a bid guarantee of five percent (5%) of the amount of the total bid including all additive alternates, if any, and may be a certified check or cashier's check or a Bid Bond, made payable to: **Treasurer, City of Norfolk**. Such bid bond or check shall be submitted with the understanding that it shall guarantee that the bidder will not withdraw its bid during the period of sixty (60) days following the opening of bids; that if its bid is accepted, it will enter into a Contract with the Owner in accordance with a form of agreement acceptable to and approved by the Owner and that the required Performance and Payment Bonds will be given; and that in the event of the withdrawal of said bid within said period, or failure to enter into said contract and given said bonds within ten (10) days after it has received notice of acceptance of its bid, the bidder shall be liable to the Owner for the full amount of the bid guarantee as representing the damage to the Owner on account of the default of the bidder in any particular thereof. The bid bonds and checks will be returned to the bidders after the Owner and the lowest, responsive, responsible bidder have executed a contract. If the required contract has not been executed within sixty (60) days after the date of the opening of the bids, then the bond or check of any bidder will be returned upon its request, provided it has not been notified of the acceptance of its bid prior to the date of such request.

6. PERFORMANCE AND PAYMENT BOND

The Contractor shall furnish a performance bond and a labor and material payment bond each in the amount of 100% of the contract price. Said bonds shall be delivered to the Owner (in duplicate) and shall be approved by the Owner prior to the execution of a construction contract between the Contractor and the Owner. Bonds shall be City of Norfolk standard form and shall be in accordance with Section 33.1-76 of the Norfolk City Code. All

costs of bonds shall be paid by the Contractor. A bond rider will be required should change orders increase the amount of the contract by \$100,000 or more.

7. NEGOTIATIONS WITH APPARENT LOW BIDDER

The City reserves the right to negotiate with the lowest, responsive, responsible bidder if the bid exceeds available funds. Negotiations may include reduction in bid price, modification and/or reduction in scope of the work, substitution of materials, or any other alterations to the work so that the low bid is reduced to within available funds including a reasonable fund balance for contingency funds to be available during the course of construction.

8. TIME OF COMPLETION

(a) Time is of the essence. All work shall be completed within **Two Hundred Ten (210)** calendar days from the Notice to Proceed. Work shall commence within (10) ten days from date of Notice to Proceed.

(b) Work shall not commence until the Contractor has received a fully executed copy of the Contract which authorizes the Work and has also received a Notice to Proceed issued by the authorized City representative. Work commenced prior to receipt of both a fully executed copy of the Contract and a written Notice to Proceed from an authorized City official shall be deemed unauthorized and such work will progress solely at Contractor's risk.

9. NON-DISCRIMINATION CLAUSE

The Contractor agrees to comply, and to require all suppliers and subcontractors paid in whole or in part from funds made available under this contract to comply with Section 122(a)(1) of the State and Local Fiscal Assistance Act of 1972 (P. L. 92-512), as amended, to wit:

"No person in the United States shall, on the grounds of race, color, national origin, or sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity of a State government or unit of local government, which government or unit receives funds made available under Subtitle A (of Title I of the Act.)

Any prohibition against discrimination on the basis of age under the Age Discrimination Act of 1975 or with respect to an otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973 shall also apply to any such program or activity.

Any prohibition against discrimination on the basis of religion, or any exemption from such prohibition, as provided in the Civil Rights Act of 1964 or Title VIII of the Act of April 11, 1968, hereafter referred to as the Civil Rights Act of 1968, shall also apply to any such program or activity."

Further, the Contractor agrees to comply with Section 33.1-53 of the Code of the City of Norfolk, Virginia 1979, as amended, regarding prohibited employment discrimination.

10. MINORITY BUSINESS CLAUSE

It is the policy of the City of Norfolk to facilitate the establishment, preservation, and strengthening of small businesses and businesses owned by women and minorities and to encourage their participation in the City's procurement activities. Toward that end, the City encourages these firms to compete and encourages non-minority firms to provide for the participation of small businesses and businesses owned by women and minorities through partnerships, joint ventures, subcontracts, and other contractual opportunities. Bidders (offerors) are asked, as part of their submission, to describe any planned use of such businesses in fulfilling this contract.

11. NON-COLLUSION AFFIDAVIT

(a) Every bidder, by submitting a bid, shall be deemed to covenant, with regard to said bid, as follows:

(1) that said bid was arrived at independently without collusion, consultation, communication, or agreement for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor.

(2) that, unless otherwise required by law, the prices which have been quoted in the bid submitted have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor.

(3) that no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

A bid shall not be considered for award nor shall any award be made where the bidder shall have failed to comply with a(1), a(2), or a(3) above.

(b) Every bidder, in addition to making the above covenants (a)(1), (a)(2) and (a)(3) will be required to provide the City of Norfolk, with the bid submitted, the affidavit contained herein.

(c) Every bidder will be required to disclose, with the submitted bid, the following information:

(1) the correct mailing address of the bidder.

(2) if a corporation, the name and current mailing address of the President, the Secretary and the Treasurer of the corporation.

(3) if a partnership, proprietorship or other firm, the name and current mailing address of each partner, proprietor or member of said firm.

(4) whether or not the bidder is associated with; owns, in whole or in part; or is owned, in whole or in part, or is a subsidiary of, any other bidder.

(d) The fact that a bidder (1) has published price lists, rates or tariffs covering items included in the submitted bid; (2) has informed prospective customers of proposed or pending publication of new or revised price lists for such items; or (3) has sold the same items to other customers at the same prices being bid, does not constitute a disclosure within the meaning of Subparagraph 9(a).

(e) Any bid submitted by a corporate bidder shall be deemed to have been authorized by the Board of Directors of the bidder and such authorization shall be deemed to include the signing and submission of the bid and the execution of the affidavit required in (b) above as the acts and deeds of the corporation.

12. SUBSTANCE ABUSE AND DRUG-FREE WORK PLACE

The Contractor agrees to comply with Section 33.1-58 of the Code of the City of Norfolk, Virginia, 1996, as amended, regarding substance Abuse and Drug-Free Work Place Policy.

Bids to be opened: **2:00 p.m., Tuesday
May 22, 2012**
Work to be Completed in: **210 calendar days**
Liquidated Damages: **\$100.00 per day to Substantial Completion
\$300.00 per day to Final Completion**
Performance Bond: **100%**
Payment Bond: **100%**
Bid Bond: **5%**

BID FORM

To: City of Norfolk
Department of Public Works
810 Union Street, Room 700
Norfolk, Virginia 23510

A. LUMP SUM BID

In compliance with the Invitation for Bids and Instructions to Bidders, the General and Supplementary Conditions of the Contract, the contract drawings and specifications titled **BOUSH STREET PARKING GARAGE – ELEVATOR MODERNIZATION** and all addenda issued to date, all of which are part of this bid, the undersigned hereby proposes to furnish all items, including materials, labor, and equipment called for by, and in strict accordance with Contract Documents for the sum of:

\$ _____
(Use words)
_____ Dollars (\$ _____)

ALTERNATE BID ITEM

1. Deduct: Hydraulic Jack

\$ _____
(Use words)
_____ Dollars (\$ _____)

TOTAL BID (LUMP SUM + DEDUCT ALT 1)

\$ _____
(Use words)
_____ Dollars (\$ _____)

Basis of Award will be the lowest responsive and responsible TOTAL BID (Lump Sum + Deduct Alt 1)

B. ADDENDA

The undersigned acknowledges receipt of the following addenda:

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

Addendum No. _____ Dated: _____

We agree to enter into a contract with the City of Norfolk, Virginia within ten (10) days of the award of same to us for the price named in our bid.

It is expressly agreed by us that the City of Norfolk, Virginia shall have the right to reject any and all bids and to waive any informalities.

In default of the performance on our part of the conditions of bid, our failure to enter into a contract with the City of Norfolk, Virginia, within the time above set, we herewith furnish a certified check, cashier's check (or Bid Bond) in the amount of \$_____, which shall be forfeited as liquidated damages to the City of Norfolk, Virginia, but otherwise the said check or Bid Bond shall be returned.

We agree to begin work at any time after receipt of the Notice to Proceed from the Director of Public Works and complete all of the Work within **Two Hundred Ten (210) calendar days** from the Notice to Proceed.

C. Norfolk Businesses: It is the policy of the City to support Norfolk businesses and workforce development and it encourages companies with corporate offices in Norfolk and which employ Norfolk residents to compete for City contracts. Bidders are asked, as part of their submission, to advise of their Norfolk location and detail their employment of Norfolk residents.

D. Equal Opportunity Business Development: It is the policy of the City of Norfolk to facilitate the establishment, preservation, and strengthening of small businesses and businesses owned by women and minorities and to encourage their participation in the City's procurement activities. Toward that end, the City encourages these firms to compete and encourages non-minority firms to provide for the participation of small businesses and businesses owned by women and minorities through partnerships, joint ventures, subcontracts, and other contractual opportunities. Bidders (offerors) are asked, as part of their submission, to describe any planned use of such businesses.

1. Is your firm a minority owned business? Yes ___ No ___ If yes, please check the appropriate category: ___ African American (male), ___ African American (female), ___ Caucasian (female), ___ Hispanic (male), ___ Hispanic (female), ___ Asian American (male), ___ Asian American (female), ___ American Indian (male), ___ American Indian (female), ___ Eskimo (male), ___ Eskimo (female), ___ Aleut (male), ___ Aleut (female), ___ Other (male), ___ Other (female).

2. Subcontracting Opportunities for Small, Women Owned, Minority Business Enterprises and Disabled Veterans. All prime contractors are requested to furnish the following information regarding participation of small, women owned, minority business enterprises and disabled veterans:

a. Proposed Name of your Subcontractor(s):

b. Proposed Minority Category of Subcontractor(s) - please check the appropriate category(ies):

<input type="checkbox"/> African American (male)	<input type="checkbox"/> African American (female)
<input type="checkbox"/> Hispanic (male)	<input type="checkbox"/> Hispanic (female)
<input type="checkbox"/> Asian American (male)	<input type="checkbox"/> Asian American (female)
<input type="checkbox"/> American Indian (male)	<input type="checkbox"/> American Indian (female)
<input type="checkbox"/> Eskimo (male)	<input type="checkbox"/> Eskimo (female)
<input type="checkbox"/> Aleut (male)	<input type="checkbox"/> Aleut (female)
<input type="checkbox"/> Other (male)	<input type="checkbox"/> Caucasian (female)
	<input type="checkbox"/> Other (female)

c. Proposed Amount of Subcontracts:

d. Proposed Description of commodity (i.e. masonry, hauling, insulation, etc.):

e. Proposed Description of Project:

f. Proposed Total value of awards to all subcontractors:

g. Proposed Total Number of minority subcontracts awarded:

h. If you do not propose the use of any subcontractors, please check here ____.

E. The undersigned has read all sections under "Instructions to Bidders."

F. **CONTRACTOR'S REGISTRATION AND SIGNATURE**

Registered Virginia Contractor Class and No. _____

City of Norfolk Business License No. _____

Contractor _____ Signed _____ (SEAL)

Date _____ Title _____

NOTE: If Bidder is a corporation, write state of incorporation under signature and if a partnership, give full names of all partners.

End of Page

AFFIDAVIT

City of Norfolk, Virginia project: **Boush Street Parking Garage – Elevator Modernization**

Bid Date: _____

STATE OF VIRGINIA

(City/County)

This day personally appeared before the undersigned, a Notary Public in and for the City/County and State aforesaid, _____, who having been first duly sworn

(name of owner, partner, president)

according to law, did depose and aver as follows:

(a) That he is _____
(owner, partner, president, etc.)

of _____
(insert name of contractor)

(b) That he is personally familiar with the bid of _____
(insert name of contractor)
submitted in connection with the above captioned City of Norfolk project.

(c) That said bid was formulated and submitted in good faith as the true bid of said bidder.

(d) That said bid in no manner violates the Sherman Antitrust Act (15 U.S.C. '1 *et seq.*), The Virginia Antitrust Act (n59.1-9.1 through n59.1-9.17 Code of Virginia, (1950), as amended) or the Conspiracy to Rig Bids to Government Act (nn59.1-68.8, Code of Virginia (1950), as amended.

And further this deponent saith not.

Affiant

Subscribed and sworn to before me this _____ day of _____, 20____.

My commission expires: _____, 20____

Notary Public

MAILING ADDRESS, FAX AND TELEPHONE NUMBER OF BIDDER:

IF CORPORATION, PROVIDE NAME AND MAILING ADDRESS AS REQUIRED BELOW

PRESIDENT

SECRETARY

TREASURER

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IF PARTNERSHIP, PROPRIETORSHIP, OR OTHER FIRM, PROVIDE NAME AND MAILING ADDRESS OF EACH PARTNER, PROPRIETOR, OR MEMBER OF FIRM.

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COMPLIANCE WITH STATE LAW

AUTHORIZATION TO TRANSACT BUSINESS IN THE COMMONWEALTH

I. CERTIFICATION

- A. The Bidder/Vendor (Please fill in with your enterprise's complete name)

certifies that it is organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50.

The identification number issued to Bidder/Vender by the State Corporation Commission: _____

- B. Bidder/Vendor that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50 or as otherwise required by law shall describe why it is not required to be so authorized:

Bidder/Vendor: _____

Signed: _____

Title: _____

Date: _____

II. INSTRUCTIONS

- a. The Bidder/Vendor shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Vendor learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

- b. A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Bidder's/Vendor's responsibility. Failure of the Bidder/Vendor to furnish a certification or provide such additional information as requested by the appropriate City purchasing official may render the Bidder/Vendor non-responsible.
- c. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of a Bidder/Vendor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- d. The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Bidder/Vendor knowingly rendered an erroneous certification, in addition to other remedies available to the City, the appropriate City purchasing official may terminate the contract resulting from this solicitation for default.

End of Page

THE CITY OF NORFOLK, VIRGINIA

OFFICE OF THE CITY MANAGER

CONTRACT AGREEMENT

THIS AGREEMENT, made as of the ____ day of _____ in the year **2012**, is between the **City of Norfolk, Virginia**, acting by and through the City Manager, hereinafter styled the **City**, and

party of the second part, hereinafter styled the **Contractor**.

WITNESSETH, That whereas the City has awarded to the Contractor, in accordance with his bid of **May 22, 2012** a contract for **BOUSH STREET PARKING GARAGE – ELEVATOR MODERNIZATION** as described in specifications and drawings prepared therefor by **Pace Collaborative, 1277 Perimeter Parkway, Virginia Beach, Virginia 23462** hereinafter styled the Engineer, or by the City of Norfolk, and on file in the office of the Director of Public Works of the City of Norfolk, Virginia.

ARTICLE 1 - THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 2 - DATE OF COMMENCEMENT AND COMPLETION TIMES

The Contractor further agrees to begin Work at such a date as the Director of Public Works Department, Norfolk, Virginia, shall notify it to begin via a Notice to Proceed letter, and that it will achieve Substantial Completion of the entire Work in accordance with Paragraph 9.8 of the General Conditions not later than **Two Hundred Ten (210) consecutive calendar days** from the date of commencement as well as achieve Final Completion in accordance with Paragraph 9.10 of the General Conditions not later than **Two Hundred Forty (240) consecutive calendar days** from the date of commencement..

ARTICLE 3 - LIQUIDATED DAMAGES

The Contractor and the City recognize that time is of the essence of this Agreement. In view of the difficulty of ascertaining the loss which the City will suffer by reason of delay in the performance of the Work, the Contractor and the City hereby agree upon as the liquidated damages set below that the City will suffer by reason of delay and/or default, and not as a penalty. Further, the City shall deduct and retain the amount of such liquidated damages out of the moneys which may be due or become due to the Contractor under this Agreement.

Accordingly, should the Contractor fail to achieve Substantial Completion of the aforesaid Work in accordance with the contract documents to the satisfaction and approval of the Engineer within the time stipulated in Article 2 above, the Contractor shall pay to the City of Norfolk, Virginia,

One Hundred Dollars and Zero Cents (\$100.00) for every calendar day beyond the time set for substantial completion until the Work is substantially complete.

Starting from the date when Substantial Completion has been achieved, should the Contractor fail to achieve Final Completion of the aforesaid Work in accordance with the contract documents to the satisfaction and approval of the Engineer within the time stipulated in Article 2 above, the Contractor shall pay to the City of Norfolk, Virginia, **Three Hundred Dollars and Zero Cents (\$300.00)** for every calendar day beyond the time set for Final Completion until the total project is fully complete and ready for final payment.

ARTICLE 4 - CONTRACT PRICE

The City shall pay the Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined below subject to additions and deductions as provided in the Contract Documents:

For all Work other than Unit Price Work, a lump sum of:

_____ **Dollars and ____ Cents (\$XXX.XX)**

All specific cash allowances are included in the above price and have been computed in accordance with Paragraph 3.8 of AIA A201-2007, General Conditions of the Contract for Construction (as modified).

ARTICLE 5 - PAYMENTS

Based upon applications for payment submitted to the Engineer by the Contractor and certificates for payment issued by the Engineer, the City shall make monthly progress payments on account of the contract sum to the Contractor as provided in the conditions of the contract as follows:

The City will pay the Contractor, on or about the thirtieth calendar day after receipt of a Request for Payment, ninety-five percent (95%) of the portion of the contract sum properly allocable to labor, materials, and equipment incorporated in the Work and ninety-five percent (95%) of the portion of the contract sum properly allocable to materials and equipment suitably stored at the site or at some other location agreed upon in writing by the parties, less the aggregate of previous payments in each case; provided, however, that the owner, at any time after fifty percent (50%) of the Work has been completed, if it finds that satisfactory progress is being made, may make any of the remaining partial payments in full; and upon final completion, a sum sufficient to increase the total payment to one-hundred percent (100%) of the contract sum, less such retainage as the Engineer shall determine for all incomplete Work and unsettled claims. But such full payment or payments shall in no manner be construed as reducing the amount of the bond, or the liability of the surety thereon, until final completion and acceptance of all items of Work herein set forth.

The action of the Engineer by which the Contractor is to be bound according to the terms of this contract shall be that evidenced by his final estimate and certificate, all prior estimates upon which ninety-five percent (95%) or more may be made, being merely payment on account, and not payments for accepted Work, and subject to the correction of such final estimate, which may be made with notice to the Contractor.

ARTICLE 6 - CONTRACTOR'S REPRESENTATION

To induce the City to enter into this Agreement, the Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents and other related data identified in the Bidding Documents.
- B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all federal, state, and local laws and regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site which have been provided with the Contract Documents, and (2) reports and drawings of a hazardous environmental condition, if any, at the site, which have been provided with the Contract Documents.
- E. Contractor has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work.
- F. Contractor is aware of the general nature of Work to be performed by City and others at the Site that relates to the Work as indicated in the Contract Documents.
- G. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor
- H. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- I. Contractor hereby certifies that it has familiarized itself with Sections 33.1-86 through 33.1-93 of the Code of the City of Norfolk, Virginia, 1979, as amended, entitled "Ethics in Public Contracting," including the additional statutes set forth in Section 33.1-86 thereof, and further that all amounts received by the Contractor pursuant to this Agreement are proper and in accordance therewith.
- J. Contractor hereby certifies that at all times during which any term of this Agreement is in effect, it does not and shall not knowingly employ any unauthorized alien. For purposes of this section, an "unauthorized alien" shall mean any alien who is neither lawfully admitted for permanent residence in the United States nor authorized to be employed by either Title 8, section 1324a of the United States Code or the U.S. Attorney General.
- K. Contractor hereby represents that it is organized as a stock or non-stock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership and is authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 or as otherwise required by law.

ARTICLE 7 - CONTRACT DOCUMENTS

The Contract Documents consist of the following:

- a. Invitation for Bids
- b. Instructions to Bidders
- c. Bid Form/Affidavit
- d. Bid Bond
- e. Contract Agreement
- f. Performance Bond
- g. Payment Bond
- h. AIA A201-2007, "General Conditions of the Contract for Construction" (as modified)
- i. Certificate of Insurance
- j. Notice of Award
- k. Notice to Proceed
- l. Change Orders (if any)
- m. Other Documents as may be required by law or appended hereto
- n. Plans and Drawings prepared by: **Pace Collaborative, 1277 Perimeter Parkway, Virginia Beach, Virginia 23462**
- o. Specifications prepared or issued by: **Pace Collaborative, 1277 Perimeter Parkway, Virginia Beach, Virginia 23462**
- p. Addendum (as listed in Bid Form)

end of page

Witness the following signatures and seals:

Witness:

Seal if
Incorporated

_____ (SEAL)

By: _____ (SEAL)

President/Vice-President (SEAL)

Virginia State Contractor's License No. _____

City of Norfolk Business License No. _____

Contents Approved:

Director of Public Works

Approved as to form and correctness:

Deputy City Attorney

CITY OF NORFOLK, VIRGINIA

By _____
City Manager

Attest: _____

City Clerk

I hereby certify that the money required for this contract (agreement, obligation or expenditure) is in the City Treasury to the credit of the fund from which it is to be drawn, and not appropriated for any other purpose.

Account: _____

Amount: _____

Contract No.: _____

Vendor Code: _____

Director of Finance and Business Services

Date

End of Page

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PERFORMANCE BOND

Bond No. _____

Amount: \$ _____

KNOW ALL PERSONS BY THESE PRESENTS, that _____, hereinafter called the Contractor and _____ a corporation duly organized and existing under and by virtue of the laws of the State of _____, hereinafter called the Surety, and authorized to transact business within the Commonwealth of Virginia as the Surety, are held and firmly bound unto the City of Norfolk as Owner, in the sum of _____ **Dollars and _____ Cents** (\$ _____), lawful money of the United States of America, for payment of which, well and truly be made to the Owner, the Contractor and the Surety bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the Contractor has executed and entered into a certain Agreement, hereto attached, with the Owner dated _____, **2012**, for

BOUSH STREET PARKING GARAGE – ELEVATOR MODERNIZATION

NOW THEREFORE, if the Contractor, and its successors and assigns, shall at all times duly, promptly, and faithfully perform the Work and any alteration in or addition to the obligations of the Contractor arising thereunder, including the matter of infringement, if any, of patents or other proprietary rights, and shall assure all guarantees against defective workmanship and materials, including the guarantee period following final completion by the Contractor and final acceptance by the Owner and comply with all the covenants therein contained in the Specifications, Drawings, and other Contract Documents required to be performed by the Contractor, in the manner and within the times provided in the Agreement, and shall fully indemnify and save harmless the Owner from all costs and damage which it may suffer by reason or failure to do so, and shall fully reimburse and repay it all outlay and expenses which it may incur in making good any default, and reasonable counsel fees incurred in the prosecution of or defense of any action arising out of or in connection with any such default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that the Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract Documents or to the Work to be performed thereunder, or payment thereunder before the time required therein, or waiver of any provision thereof, or assignment, subletting or transfer thereof or any part thereof, shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration, addition to the terms of the Contract Documents or any such payment, waiver, assignment, subcontract or transfer.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

Whenever Contractor shall be declared by Owner to be in default under the Contract, the Owner having performed Owner's obligations thereunder, the Owner shall have the right, at its option, to require the Surety to promptly proceed to remedy the default within 30 days of notice by proceeding or procuring others to proceed with completing the Agreement with its terms and conditions including the correction of any defective work and the provision of safety measures required as the result of such default; and all reserves, deferred payments, and other funds provided by the Agreement to be paid to Contractor shall be paid to Surety at the same times and under the same conditions as by the terms of that Agreement such fund would have been paid to Contractor had the Agreement been performed by Contractor; and Surety shall be entitled to such funds in preference to any assignee of Principal of any adverse claimant. Notwithstanding the above, the Owner shall have the right, with

the approval of the Surety which shall not be unreasonably withheld, to take over and assume completion of the Agreement and be promptly paid in cash by the Surety for the cost of such completion less the balance of the Contract price.

IN WITNESS WHEREOF, all above parties bounded together have executed this instrument this _____ day of _____, 2012, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

(_____)

By: _____(Seal)

Name: _____

Title: _____

Attest

SURETY

By: _____(Seal)

Attest

APPROVED AS TO FORM: _____, 2012

City of Norfolk, OWNER

By: _____
Deputy City Attorney

NOTE: Date of Bond shall not be prior to the date of the Agreement. If the Contractor is a partnership, all partners shall execute the Bond.

IMPORTANT: The Surety named on this Bond shall be one who is licensed to conduct business in the Commonwealth of Virginia, and named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies, as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent shall be accompanied by a certified copy of the authority to act for the Surety at the time of signing of this Bond.

End of Page

PAYMENT BOND

Bond No. _____

Amount: \$ _____

KNOW ALL PERSONS BY THESE PRESENTS, that _____, hereinafter called the Contractor and _____, a corporation duly organized and existing under and by virtue of the laws of the State _____, hereinafter called the Surety, and authorized to transact business within the Commonwealth of Virginia as the Surety, are held and firmly bound unto the City of Norfolk as Owner, in the sum of _____ **Dollars and** _____ **Cents** (\$ _____), lawful money of the United States of America, for payment of which, well and truly be made to the Owner, the Contractor and the Surety bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the Contractor has executed and entered into a certain Agreement, hereto attached, with the Owner dated _____, 2012, for

BOUSH STREET PARKING GARAGE – ELEVATOR MODERNIZATION

NOW THEREFORE, if the Contractor shall promptly make payments to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the Work provided for in the Agreement, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, repairs on machinery, equipment, and tools consumed, used or rented in connection with the construction of the Work, and all insurance premiums on the Work, and for all labor performed in the Work, whether by Subcontractor or otherwise, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract Documents or to the Work to be performed thereunder, shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract Documents.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, all above parties bounded together have executed this instrument this ____ day of _____, 2012, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

(_____)

By: _____ (Seal)

Name: _____

Title: _____

Attest

SURETY

By: _____(Seal)

Attest

APPROVED AS TO FORM: _____, 2012

City of Norfolk, OWNER

By: _____
Deputy City Attorney

NOTE: Date of Bond shall not be prior to the date of the Agreement. If the Contractor is a partnership, all partners shall execute the Bond.

IMPORTANT: The Surety named on this Bond shall be one who is licensed to conduct business in the Commonwealth of Virginia, and named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies, as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent shall be accompanied by a certified copy of the authority to act for the Surety at the time of signing of this Bond.

End of Page



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General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Boush Street Parking Garage - Elevator Modernization

THE CITY OF NORFOLK, a municipal corporation of the Commonwealth of Virginia,
hereinafter called the "City" or the OWNER:

(Name, legal status and address)

810 Union Street, Room 700

Norfolk, Virginia 23510

THE ARCHITECT:

(Name, legal status and address)

Pace Collaborative

1277 Perimeter Parkway

Virginia Beach, Virginia 23462

This document has important
legal consequences.

Consultation with an attorney
is encouraged with respect to
its completion or modification.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them ~~as being necessary to produce the indicated results or from prevailing custom or trade usage as being required to produce the intended result whether or not specifically called for at no additional cost to the Owner.~~

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§ 1.2.1.1 Should any conflict be found in the Contract Documents, the Engineer/Architect shall interpret or construe the Contract Documents so as to secure the most substantial and complete performance of the Work. In other words, the better quality or great quantity of work shall be provided in accordance with the Engineer's/Architect's interpretation. The Engineer's/Architect's decision in this matter shall be final.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 Wherever in the Contract Documents the words "as approved," "as directed," "as required," "acceptable," "satisfactory" and words of like import are used with reference to the Work or its performance, and without further qualification, it shall mean as approved, as directed, as required by the Engineer/Architect and acceptable, satisfactory, etc. to the Engineer/Architect.

§ 1.2.5 The general character of the detailed work is shown on the Drawings, but minor modifications may be made on the shop drawings or mock-ups. Any details shall be worked out in relation to their location and their connection to other parts of the Work. Where on any drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out also apply to all other like portions of the Work. Where details or conditions are indicated but started only, such details or conditions shall be continued throughout the courses or parts in which they occur and shall also apply to all other similar parts in the Work unless otherwise indicated or specifically noted.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Drawings, Specifications and other documents, including those in electronic form, prepared by the Architect and the Architect's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications and other documents prepared by the Architect or the Architect's consultants, and unless otherwise indicated the Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and them, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, in addition to the copyrights. All copies of Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work. The Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. As such, the City is hereby declared sole-owner of these documents in regards to this Project and will abide by the limitations described in Subparagraph 1.5.1. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service, are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants. Submittal or distribution to meet official regulatory requirements or

for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' copyrights or reserved rights.

~~§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.~~

§ 1.5.2. Intentionally Omitted.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

~~§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.~~

§ 2.2.1. Intentionally Omitted.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. Unless otherwise specified, the following applies:

Water line taps, construction of pits for water taps and meter, and restoration of the area to its original condition shall be performed by the Contractor at its expense. Only new water meters shall be installed by City forces at the expense of project sponsor (i.e. the City or private developer). All the aforementioned shall be coordinated by the Contractor.

Sanitary taps and cleanouts shall be done by the Contractor or its Subcontractor at the Contractor's expense. HRSD tap fees will be paid by the Owner.

For gas and electrical work and associated meter installations, Contractor shall be responsible for complete coordination of work with utilities, including provision of all necessary labor, equipment, and materials as required in the Contract Documents as well as payment of all resulting costs to aforesaid Work.

For telephone and cables, Contractor shall be responsible for coordination of telephone trunk line and cable installation with telephone/television company to the "point of penetration" to the facility, including provision of all necessary labor, equipment, and materials as required in the Contract Documents as well as payment of resulting costs to all aforesaid work.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner, subject to Subparagraph 3.7.4, but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.3.1 The Contractor shall be responsible for protecting pins, stakes, marks, hubs, and control points. Replacement of damaged or destroyed pins, stakes, marks, hubs or control points shall be conducted under the supervision of a surveyor licensed in the Commonwealth of Virginia, if required by the City, and at the Contractor's expense. The Contractor shall coordinate with the Surveys Division of the Department of Public Works (664-4645) prior to resetting of points and shall provide certified documentation to include the reference/recovery sheet with swing ties for new benchmarks.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.(1) CD containing the Drawings and Specifications, in PDF format, free of charge.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. ~~Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect.~~ ~~failure.~~ If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. Any failure by the Contractor to acquaint himself with such information shall not relieve him from the responsibility for successfully performing the Work.

.1 Dimensions of Work shall not be determined by scale or rule, but figured dimensions shall be used at all times.

.2 The Contractor shall verify all dimensions by measurement at the jobsite, and shall take any and all other measurements necessary to verify the drawings and to properly layout the Work.

.3 The study of the Contract Documents by the Contractor shall be made sufficiently in advance of the actual layout of the Work so as to allow the Contract Documents to be interpreted or modified by the Engineer/Architect.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Architect ~~issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor~~ The Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, or for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities. Documents unless the Contractor recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Architect.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite

safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

Substituted Materials. Request for approval of any substituted material and equipment for those specified or shown on the drawings shall be made in writing to the Engineer within 30 days after award of the Contract. If this request is not submitted, the Engineer reserves the right to have the Contractor furnish the material and equipment definitely specified or shown on the plans. The Contractor shall show, in writing, the monetary savings, improvement in quality, time savings, and other factors to be gained from the proposed substitute. Approval of substitute materials and equipment will be at the sole discretion of the Engineer.

Or Equal. It is not the intent of these specifications to exclude or omit products or any responsible manufacturer, if said products are equal in every respect to those mentioned herein. Whenever an article, or any class of materials is specified by trade name or by name of any particular patentee, manufacturer or dealer, it shall be taken as intending to mean equal thereto in quality, finish, size, and durability and equally as serviceable for the purpose for which it is or they intended. Request for approval of any "equal" material or product for those specified or shown on the drawings shall be made in writing to the Engineer within 30 days after award of the Contract. If this request is not submitted, the Engineer reserves the right to have the Contractor furnish the material and products definitely specified and shown on the plans. The Contractor shall show, in writing, that the material or product being proposed is equal in every respect to that specified and shall provide all necessary supporting documentation requested by the Engineer. The quality shall be determined by the Engineer, and he alone shall be sole judge as to what materials or services will be accepted as equal. No substitution of materials, methods, or services specified shall be made without written approval from the Engineer.

Materials and Equipment Manufacturer's Recommendation. All materials, equipment or other items specified by trade or manufacturer's name shall be handled, installed, erected or connected in strict conformity with the manufacturer's recommendations and/or specifications.

By making requests for substitutions, the Contractor:

.1 Represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;

.2 Represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;

.3 Certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs and time extensions related to the substitution which may subsequently become apparent; and

.4 Will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded. The Contractor shall be advised that there is NO permit fee for new construction, additions, etc. for CITY-OWNED BUILDINGS. Before final payment is made on the Project, Contractor shall demonstrate that the necessary inspections, certificates of occupancy, clearance, and/or acceptance from the City, State, Federal, and/or private entities/organizations such as from the City's Building Official, Corps of Engineers, Department of Environmental Quality, etc. have been obtained.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. disturbed, Contractor shall not disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so "except in an emergency as required by Paragraph 10.4. . The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. With respect to unforeseen Work that is paid on a Unit Price Basis, any adjustment in quantity and Contract price will be determined

by the Engineer/Architect subject to the provisions of Subparagraph 15.1.5.3. Engineer/Architect will review with the Contractor the Engineer's/Architect's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.4.1 Possible Price and Times Adjustments. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Terms if:

- a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner in respect to Contract price and Contract times by the submission of a Bid or becoming bound under a negotiated contract; or
- b. The existence of such condition could reasonably have been discovered or revealed as a result of examination, investigation, exploration, test, or stud of the Site and contiguous areas required by the bidding requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
- c. Contractor failed to give written notice within the time and as required by Subparagraph 3.7.4.

§ 3.7.4.2 Subsurface and Physical Conditions. The Contract Documents identify:

- a. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that the Engineer/Architect has used in preparing the Contract Documents;
- b. Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that the Engineer/Architect has used in preparing the Contract Documents.

§ 3.7.4.3 Limited Reliance by Contractor on Technical Data Authorized. Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data", if any, shall be identified in Supplementary General Conditions. Contractor may not rely upon or make any claim against Owner, Engineer/Architect, or any of Engineer's/Architect's consultants with respect to:

- a. The completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by the Contractor, and safety precautions and programs incident thereto; or
- b. Any Contractor interpretation of or conclusion drawn from any "technical data" or any such data, interpretations, opinions, or information.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2. The Contractor shall attach with monthly invoices the original copy of sales invoices/receipts for materials or equipment that are covered under allowances.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner ~~with reasonable promptness in~~ sufficient time to avoid delay in the Work.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

.1 The superintendent shall not be changed except with the consent of the Owner, unless the superintendent ceases to be in the Contractor's employ.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, and prior to mobilization or proceeding with any work on site, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§3.9.4 The superintendent shall be present on the project site whenever work is being performed, unless otherwise authorized in writing by the Owner. The Contractor shall notify the Owner whenever the superintendent will be absent for four hours or more. This notification shall include the name of the designated substitute. Any substitute shall be familiar with the project and have the same authority of the primary superintendent. Verbal notification is acceptable for periods less than one full workday.

§3.9.5 The superintendent shall serve as a day to day point of contact on the contract for the Owner and shall, as a minimum, have the authority to:

- a. Act on behalf of the Contractor.
- b. Direct the work of subcontractors.
- c. Respond to directed changes in the schedule.
- d. Provide detailed updates to and respond to inquiries from the Owner on the progress of the work.
- e. Act upon verbal and written notification of non-conforming work.
- f. Respond to any complaints regarding the conduct or actions of any employee of the Contractor or any subcontractor.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. At the Pre-Construction Conference, the Contractor shall submit to the Engineer for its timely review a preliminary construction schedule indicating the times (number of days or dates) for starting and completing the various stages of the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

.1 The progress schedule shall be in the form of a bar graph and shall identify each major or critical activity. The progress schedule shall be updated monthly. Five (5) copies of the updated progress schedule shall be submitted with each Application for Payment.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

.1 Reproduction of the Contract Drawings, or any portion thereof, shall not be acceptable.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

The Contractor, within 15 days from the Notice to Proceed, shall submit to the Engineer/Architect for approval, a complete schedule of submittals for shop drawings and technical and/or engineering data sheets covering all items and equipment for this Contract as listed in each respective division. Submit for approval *six (6) copies of certified Shop Drawings and technical data sheets* plus sufficient copies for Contractor's use. Approval of the above submissions shall not relieve the Control from complying with the Drawings and Specifications, nor shall such approval be construed as a guarantee of the accuracy of dimensions or other covered items. The Engineer shall endeavor to process all drawings, data sheets, etc., within 21 calendar days of receipt unless impractical. Except for construction schedule and schedule of values that need to be turned over directly to the City for review/approval, the Contractor shall forward all other submittals for review/approval to only one clearing house. The City will notify the Contractor during the Pre-Construction Conference where to send these submittals.

.1 Unless otherwise directed or specified, samples shall be submitted in duplicate. Samples shall be properly labeled, bearing the name and quality of material, name of the manufacturer, name of Project, name of the Contractor and the date of submission.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, ~~or will do so~~ and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. All copies of Shop Drawings submitted for approval shall bear the following statement: "Checked and certified correct for conformance with Contract Documents." This statement shall be dated and signed by the Contractor and shall appear on each submittal. One copy of each approved submittal shall be kept at job site at all times.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

.1 The Contractor shall furnish to the field as many prints of the approved Shop Drawings as may be required.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all

performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.14.3 UNDERGROUND UTILITY DAMAGE PREVENTION ACT

The Contractor shall be required and agrees to comply with all the provisions of the Virginia Underground Utility Damage Prevention Act (Section 56-265.14, et seq, Code of Virginia, 1950, as amended) and hereby agrees to hold the City of Norfolk harmless against any loss, damages or claims of any nature whatsoever arising out of the Contractor's failure to comply with the requirements of said Act.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project. In addition, immediately after the completion of the Work, or any portion thereof, the Contractor shall restore the facility, street, and surrounding area to a condition as clean as before the Work was begun. The drainage system shall also be inspected and cleaned by the Contractor. If done by the City or its agents, any expense the City may incur will be charged against the Contractor and deducted before Final Payment is made. The Contractor will be required to back fill along the edges of the sidewalks, driveways and curbs where settlement has occurred, and reshape and reslope where directed. Site must be maintained regularly according to State and City regulations, including regular grass cutting. During the progress of the Work, the sidewalks and portions of the streets adjoining the Work, or in its vicinity, must not be obstructed or littered, and the adjacent sidewalks and gutters must be kept clean as directed by the Engineer.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and ~~Owner shall be entitled to reimbursement from the costs thereof shall be charged to the Contractor.~~

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the

Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity ~~that which~~ would otherwise exist as to a party or person described in this Section 3.18.

§3.18.1.1 The requirements of this Paragraph 3.18 shall be incorporated into the Contractor's insurance policies in a manner approved by the Owner.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 ~~The Owner shall retain an architect-architect is the person~~ lawfully licensed to practice architecture or an entity lawfully practicing architecture ~~in the jurisdiction where the Project is located. That person or entity is identified as the Architect identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect" means the Architect or the Architect's authorized representative.~~

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

~~§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.~~

§ 4.1.3. Intentionally Omitted.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 As the Owner's Project representative, the Consulting Engineer's/Architect's duties, responsibilities and limitations of authority shall be presented during the Pre-Construction Conference. The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§4.2.1.1 Engineer – An individual or entity having a contract with the Owner to furnish services as Owner's independent professional consultant with respect to the Project and who is identified as such in the Agreement.

§ 4.2.2 The Architect-Architect, as a representative of the Owner, will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the Contractor's operations (1) to become familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that (2) to endeavor to guard the Owner against defects and deficiencies in the Work, when fully completed, will be

in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will ~~not have control over, charge of, or responsibility~~ neither have control over, or charge of, nor be responsible for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

§ 4.2.15 Pre-Construction Conference. Before starting the Work, the Engineer/Architect/Owner will schedule a conference to review the requirements on such matters as Project supervision and on-site inspection, Shop Drawing schedules and submission, progress schedules and reports, payrolls, payments to contractors, contract change orders, insurance, safety, labor provisions and equal opportunity in employment and any other items pertinent to the Project. Present at the conference will be the Engineer/Architect, Owner, Project Representative, the Contractor, and its Superintendent for the project.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, ~~as soon as practicable within 15 days~~ after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for ~~each principal portion of the Work~~. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within ~~the 14 day~~ 14 day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. ~~If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order~~

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~~shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.~~

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect-Architect, upon written notice of such intent, makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

~~When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.~~

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

~~**§ 5.4.3** Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.~~

§ 5.4.3. Intentionally Omitted.

§5.5 SUBCONTRACTORS COORDINATION OF WORK

Every subcontractor performing work that affects others shall provide for all requirements of the other trades, notwithstanding the Contractor's responsibility to coordinate the Work. Should the work provided by unsuitable for the application of work by any other subcontractor, the subcontractor shall notify the Contractor and the Engineer in writing immediately. The Contractor is required to forward a copy of correspondence from his subcontractors providing notice of unsuitable work.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or

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operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. ~~If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.~~
subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement ~~among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or between the Owner and Contractor; a~~

Construction Change Directive may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.1.4 Modifications shall be in compliance with the Code of the City of Norfolk, Virginia, Chapter 33.1

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 ~~Unit prices stated in the Contract Documents or subsequently agreed upon;~~ Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer's/Architect's recommendation to City as follows:

Engineer/Architect will review with Contractor the Engineer's/Architect's preliminary determinations on such matters before rendering a written recommendation thereon (by endorsement of an Application for Payment or otherwise). City's written decision thereon (by approval of Application for Payment or otherwise) will be final and binding (except as modified by Engineer/Architect to reflect changed factual conditions or more accurate data) upon Contractor, subject to the provisions of Paragraph 7.3.4.

- ~~.3 Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item..3~~ Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee;
- or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably ~~adjusted~~ adjusted provided that there is no corresponding adjustment with respect to any other item of Work.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 ~~Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and~~ Overhead and Profit: Overhead and profit costs, except where such costs have been determined by means of clause 7.3.3.2 above, wherein such costs are included in the unit prices, shall be determined as follows:

Fifteen percent (15%) of the costs determined above shall be paid for overhead and profit of the Contractor or subcontractor(s) actually performing the work, including, but not limited to, field and home office expense, superintendent, taxes, subsistence expenses of any nature, premiums on bonds, insurance, and all other costs and expenses as determined by the City.

In the event the work is performed by a subcontractor or subcontractors, the Contractor shall be paid ten percent (10%) of the total of the costs determined above, excluding the subcontractor's or subcontractors' overhead and profit, to cover and compensate the Contractor for its overhead and profit;

- .5 ~~Additional costs of supervision and field office personnel directly attributable to the change.~~
Intentionally Omitted.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the ~~Architect~~ Architect plus overhead and profit to actual net cost. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, ~~the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The amounts not in dispute for such changes in the Work shall be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs. For any portion of such cost that remains in dispute, the Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim costs. That determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.~~

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the ~~Owner pending mediation and arbitration;~~ Owner; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as

the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

Based upon Applications for Payment submitted to the Engineer by the Contractor and certificates for payment issued by the Engineer, the City shall make monthly progress payments on account of the Contract Sum to the Contractor as provided in these General Conditions of the Contract as follows:

The City will endeavor to pay the Contractor, on or about the thirtieth calendar day after receipt of Request for Payment, ninety-five (95%) of the portion of the Contract Sum properly allocated to labor, materials and equipment incorporated in the work and ninety-five percent (95%) of the portion of the Contract Sum properly allocated to materials and equipment suitably stored at the site or at some other location agreed upon in writing by the parties, less the aggregate of previous payments in each case; provided however, the City, at any time after fifty percent (50%) of the Work has been completed, if it finds that satisfactory progress is being made, may in its sole discretion may any of the remaining partial payments in full. Also, upon Substantial Completion of the Work, the City may increase total payment to one hundred percent (100%) of the Contract sum, less such retainage as the Engineer shall determine for incomplete work and unsettled claims. But such full payment or payments shall in no manner be construed as reducing the amount of the bond or the liability of the Surety thereon, until Final Completion and acceptance of all lines of Work herein set forth. Final Payment shall be made upon completion of all work and acceptance by the Engineer in accordance with the General Conditions.

The action of the Engineer by which the Contractor is to be bound according to the terms of this Contract shall be evidenced by his final estimate and certificate, all prior estimates upon which ninety-five percent (95%) or more may be made, being merely payments on account, and not payments for accepted work, and subject to the corrections of such final estimate, which may be made without notice to the Contractor thereof, or of the measurements upon which the same is based.

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application ~~shall be notarized, if required, shall, certified by an officer of the firm~~ and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, ~~or by interim determinations of the Architect,~~ but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

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§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents; ~~Documents, or~~
- .8 ~~failure to comply with obligations under the Contract.~~

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld. The City reserves the right to determine payment made.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

~~§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.~~

§ 9.6.3. A Subcontractor inquiry for progress payment and other information shall be directed to the City Attorney's office under the Freedom of Information Act.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

~~If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.~~ Intentionally Omitted.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification

by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. The Contractor shall submit a Contractor's release from liens, claims, security interests or encumbrances

along with final invoice. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. The Contractor shall provide temporary fences, barricades, coverings, or other protection to preserve existing items indicated to remain and to prevent injury or damage to persons or property.

This includes providing protection of the Work, materials, appliances and fixtures against weather, rain, wind, storms, freezing or heat. At the end of the day's work, work likely to be damaged shall be properly protected. For work on existing buildings, the Contractor shall accomplish the work in such a manner that the remainder of the building, and its contents and inhabitants, are fully protected from any weather damage.

The contractor shall be responsible for ensuring that adequate measures are taken to secure materials and equipment during the progress of the Work to prevent storm-related hazards. It is, therefore, essential that the contractor take necessary precautions to ensure that openings in the building are monitored carefully. The Contractor shall take immediate actions required to seal of such openings when rain or other detrimental weather is imminent, and at the end of each workday; and ensure that the openings are completely sealed off to protect materials and equipment in the building from damage.

The provisions of this subparagraph take precedence over any similar provisions contained in the technical specifications.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. ~~If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection.~~ Owner. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written ~~agreement of the Owner~~ direction by the City and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

~~§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.~~

§ 10.3.3. Intentionally Omitted.

~~§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents.~~ site. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

§ 10.4.1 Emergency Conditions. The issuance of a Declaration of Emergency conditions by any authorized government official may result in the suspension of the Work under the Contract and/or the ordering by the City of additional work. The Contractor shall make available to the City, during the time of the declared emergency, labor and equipment for such services under the terms and conditions of the Contract. Labor and equipment rates shall not exceed FEMA reimbursable rates for the Hampton Roads area. Failure to comply with such emergency directives may result in termination of the Contract by reason of non-compliance.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

See Subparagraphs 3.18.1 and 10.3.1

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;

- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability. All liability policies shall be written in an occurrence form unless otherwise specifically approved by the City.

The Contractor shall secure and maintain in force insurance, including malicious mischief and vandalism, with minimum acceptable amounts described below, naming the City as additional insured during the life of the Contract:

<u>.1</u>	<u>Worker's Compensation</u>	<u>Statutory</u>
	<u>Employer's Liability</u>	<u>\$ 100,000 per accident injury</u>
<u>.2</u>	<u>Commercial General Liability</u>	
	<u>Bodily Injury</u>	<u>\$ 500,000 per person</u>
		<u>\$1,000,000 per occurrence</u>
		<u>\$1,000,000 aggregate</u>
	<u>Property Damage including</u>	<u>\$ 500,000 per occurrence</u>
		<u>\$1,000,000 aggregate</u>

The Commercial General Liability Insurance required above shall also include the following extensions of coverage:

- (1) The coverage shall be provided under a Comprehensive form of policy or similar thereto.
- (2) X.C.U. Coverage -- If the Contract requires any work procedures involving blasting, excavating, tunneling or other underground work, the liability coverage shall include Standard Blasting or Explosion Coverage, Standard Collapse Coverage and Standard Underground Coverage, commonly referred to as XCU liability coverage with limits of \$500,000 per occurrence and \$1,000,000 aggregate.
- (3) The property damage coverage shall include a Broad Form Property Damage Endorsement.
- (4) Contractual Liability coverage shall be included.
- (5) Protective Liability coverage shall be included to protect the Contractor against claims arising out of operations performed by its Subcontractors.
- (6) Products Liability and/or Completed Operations coverage shall be included.

<u>.3</u>	<u>Comprehensive Automobile Liability including owned, non-owned and hired vehicles:</u>	
	<u>Bodily Injury</u>	<u>\$ 500,000 per person</u>
		<u>\$1,000,000 per occurrence</u>
		<u>\$1,000,000 aggregate</u>
	<u>Property Damage</u>	<u>\$ 500,000 per occurrence</u>
		<u>\$1,000,000 aggregate</u>

.4 Environmental Impairment Liability Insurance. If applicable, as determined by the City, the Contractor shall procure and maintain during the life of the Contract Environmental Impairment Liability Insurance, which shall protect against all claims and costs including, but not limited to, bodily injury or property damage claims (including clean-up costs) caused by pollution conditions, as herein defined, arising from the contracted work. Pollution conditions means the discharge, dispersal, release or escape of smoke, vapor, soot, fumes, acids, alkalis, toxic chemicals, liquids, gases, waste materials or other irritants, contaminants, or pollutants into or upon land, the atmosphere or any watercourse or body of water, which results in bodily injury or property damage. The

policy limits will be determined by the City and specified in the Contract Documents or required by law, whichever coverage is greater, as prescribed by City, State or Federal law/regulations.

Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

~~§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.~~

§ 11.1.3. All insurance policies required hereunder shall contain an express provision therein, or endorsement attached thereto, worded substantially as follows:

"This is not to be cancelled or become subject to reduction of coverage prior to thirty days after the City has received written notice mailed to the address noted hereinbefore, as evidenced by return receipt of registered letter."

All insurance certificates and/or policies shall designate the City of Norfolk, its employees, and its agents as "additional insured" regarding the contracted Work.

Certificates of Insurance issued by companies licensed within the Commonwealth of Virginia shall provide the designed insurance.

~~§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations. SUBCONTRACTOR'S INSURANCE. The Contractor shall required all subcontractors to secure and maintain in force insurance containing the same coverage and amounts as described in Subparagraph 11.1.2.~~

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance. Intentionally Omitted.

§ 11.3 PROPERTY INSURANCE

~~§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.~~

~~§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.~~

~~§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.~~

~~§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.~~

~~§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.~~

~~§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.~~

§ 11.3.1. Until the Work is completed and accepted by the City, the Contractor shall purchase and maintain a Builder's Risk or property insurance as is appropriate upon the entire Work at the Site to the full insurable value thereof.

§ 11.3.1.1. Intentionally Omitted.

§ 11.3.1.2. Intentionally Omitted.

§ 11.3.1.3. Intentionally Omitted.

§ 11.3.1.4. Intentionally Omitted.

§ 11.3.1.5. Intentionally Omitted.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

~~The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds. Intentionally Omitted.~~

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall

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authorize a copy to be furnished. A Performance Bond and Payment Bond Rider is required for all Change Orders that are in the amount of \$100,000 or greater; or, if the aggregate total of multiple Change Orders is equal to or greater than \$100,000.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

~~**§ 12.2.2.3** The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.~~

§ 12.2.2.3. Intentionally Omitted.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct

the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of

when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located. Intentionally Omitted.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract

with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.1.1:

- .1 _____;
- .2 _____;
- .3 _____;
- .4 _____.

§ 14.1.2. Intentionally Omitted.

§ 14.1.3. Intentionally Omitted.

§ 14.1.4. Intentionally Omitted.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, ~~upon certification by the Initial Decision Maker that sufficient cause exists to justify such action,~~ may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

Init.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work ~~not executed~~executed and costs incurred from this termination.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Decision of Owner. Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial ~~decision-evaluation and recommendation.~~ The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an ~~initial decision-final decision by the Owner~~ shall be required as a condition precedent to ~~mediation of any Claim-litigation of all Claims between the Contractor and Owner~~ arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the ~~Initial Decision Maker Architect~~ with no decision having been ~~rendered-rendered by the Owner~~. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not ~~decide-evaluate~~ disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The ~~Initial Decision Maker Architect~~ will review Claims and within ten days of the receipt of ~~a the Claim~~ take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) ~~reject-recommend rejection of~~ the Claim in whole or in part, (3) ~~approve-recommend approval of~~ the Claim, (4) ~~suggest-recommend~~ a compromise, or (5) advise the parties that the ~~Initial Decision Maker Architect~~ is unable to resolve the Claim if the ~~Initial Decision Maker Architect~~ lacks sufficient information to evaluate the merits of the Claim or if the ~~Initial Decision Maker Architect~~ concludes that, in the ~~Initial Decision Maker's Architect's~~ sole discretion, it would be inappropriate for the ~~Initial Decision Maker to resolve Architect to recommend resolution of~~ the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will ~~either reject or approve-recommend~~ either rejection or approval of the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will ~~render an initial decision-recommend~~ approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The ~~initial Owner's~~ decision shall be final and binding ~~on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution-subject of mediation or arbitration.~~

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.6. Intentionally Omitted.

§ 15.2.6.1. Intentionally Omitted.

Init.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

~~§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.~~

~~§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.~~

~~§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.~~

§ 15.3.1. Intentionally Omitted.

§ 15.3.2. Intentionally Omitted.

§ 15.3.3. Intentionally Omitted.

§ 15.4 ARBITRATION

~~§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.~~

~~§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.~~

~~§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.~~

~~§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.~~

§ 15.4.1. Intentionally Omitted.

§ 15.4.1.1. Intentionally Omitted.

§ 15.4.2. Intentionally Omitted.

§ 15.4.3. Intentionally Omitted.

§ 15.4.4 CONSOLIDATION OR JOINDER

~~§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).~~

~~§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.~~

§ 15.4.4.1. Intentionally Omitted.

§ 15.4.4.2. Intentionally Omitted.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement. Intentionally Omitted.

PART II

1. SCHEDULES AND REPORTS

Contractor shall submit for approval the following items in four (4) copies prior to commencing the Work:

- a. A complete, detailed construction progress schedule in weekly increments, showing anticipated start and completion of all sections of the Work. Also, see sections 3.10 and 3.10.1
- b. A complete list of Subcontractors
- c. A breakdown of the Project contract price for use in processing monthly requisitions.
- d. A projection of contract's monthly cash flow requirements for the duration of the Project.
- e. The above requirements may be waived for small projects at the discretion of the Engineer.

2. MINORITY PARTICIPATION

The Contractor shall notify the City in writing of the names of any minority and disadvantaged business subcontractors to be used on the Project, including the estimated dollar amount of such subcontract and the minority classification of such subcontractors. A minority and disadvantaged business is one that is at least 51% owned by an Asian American, Black, Hispanic, and American Indian, Eskimo, Aleut, or Female.

3. EROSION & SEDIMENT CONTROL

On construction projects that are required by the City's Erosion & Sediment Control ordinance (City Code Chapter 15) to have an approved erosion and sediment control plan, the Contractor shall be required to implement the approved plan and comply with all conditions of the plan. A copy of the approved plan and the Virginia Erosion

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User Notes:

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and Sediment Control Handbook. (Third Edition, 1992) shall be kept at the City. If the Contractor determines that the approved plan can not be effectively carried out, the contractor shall be responsible for notifying the plan approving authority and requesting a plan amendment as provided for in the Virginia Erosion and Sediment Control Law (Code of Virginia Title 10.1, Chapter 5, Article 4, Section 10.1-563C).

4. RIGHT TO AUDIT

For cost-reimbursement contracts, change orders issued for fixed priced contracts or other contracts in excess of \$30,000, which include the provisions of services, the Contractor shall retain all books, records and other documents relative to this Contract for five (5) years after final payment or until audited by the Office of the City Auditors shall have full access to and the right to examine and duplicate any of said materials during said period.

Boush Street Garage Elevator Mods



PACE Collaborative, P.C.

Mechanical-Electrical Engineers
1277 Perimeter Parkway
Virginia Beach, Virginia 23454
(757) 499-7223
PACE Project #7143
April 23, 2012

SPECIFICATIONS

BOUSH STREET GARAGE ELEVATOR MODS

SECTION 01005

ADMINISTRATIVE PROVISIONS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Type of Contract.
- B. Phasing and Scheduling.
- C. Contractor use of Premises.
- D. Applications for Payment.
- E. Coordination.
- F. Quality Control.
- G. Field Engineering
- H. Reference Standards.

1.2 CONTRACT METHOD

- A. Construct the Work under a single lump sum contract.
- B. The Owner reserves the right to negotiate with the lowest responsive bidder should bids exceed the available budget.

1.3 PHASING AND SCHEDULING

- A. Construction scheduling shall be integrated with the ongoing operation of the facility. Contractor shall consult with the Owner's Construction Representative to coordinate the work of this project with the building's operation.
- B. Any work which requires lifting by crane for removal or installation of equipment shall be scheduled with the Owner. In addition, any equipment which must be lifted over areas of the building which are normally occupied must be scheduled during times when those areas are unoccupied. No helicopters are allowed for

BOUSH STREET GARAGE ELEVATOR MODS

this operation.

1.4 CONTRACTOR USE OF PREMISES

- A. Limit use of premises for Work and for construction operations. Off site storage, parking and trailer space will be as specified in the contract documents or as mutually agreed upon by Contractor and the Owner.
- B. Maintain construction site, adjacent areas used for equipment and construction storage, traffic and parking areas in a sound condition. Any area used by the Contractor or any of his subcontractors shall be returned to the same condition as it was prior to construction, before final project closeout.
- C. Maintain all existing floor and roof drains and protect against contamination due to construction. Clean as required.

1.5 APPLICATION FOR PAYMENT

- A. Submit three copies of each application under procedures of Section 01300 and as required by the Section 20 of the CO-7 General Conditions. Submit payment application monthly to Engineer by last day of month.
- B. Content and Format: That specified for Schedule of Values in Section 01300.

1.6 COORDINATION

- A. The Owner will occupy the facility during the entire construction period. Coordinate all activities under this contract and cooperate with the Owner and other contractors.
- B. Coordinate work of the various Section of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.
- C. Verify characteristics of elements of interrelated operating equipment are compatible; coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

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- D. Coordinate space requirements and installation of all mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for ductwork, pipes, and conduits, as closely as practical; make runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. Execute cutting and patching to integrate elements of Work, uncover ill-timed, defective, and non-conforming work, provide openings for penetrations of existing surfaces, and provide samples for testing. Seal penetrations through floors, walls and ceilings. Patch floor and provide new floor coverings matching the surrounding covering where required as shown.

1.7 DAMAGE AND REPAIRS

- A. The Contractor shall protect the existing premises, including the buildings, grounds, appurtenances and equipment from damage which might be done or caused by work performed under this project. Any and all such damages which occur shall be repaired by the Contractor in an approved method, so as to restore the damaged area to its original condition. The Contractor shall bear the cost of such repairs.

1.8 PROTECTION

- A. Protection shall be suitable for the application and may consist of, but not be limited to, protective coverings, railings, barriers, and shields. Where the work occurs in areas normally accessible by the public, the Contractor shall post warning signs advising the public of work in progress. Such signs shall be approved by the Owner prior to posting.
- B. Existing fixtures, furnishings and equipment shall remain in place while the Contractor is working. The Contractor shall be required to protect all fixtures, furnishings and equipment from dust, debris, and any other result of his construction operations. The Contractor shall bear the cost of any damage.

1.9 CLEANING

- A. The Contractor shall broom clean mechanical equipment areas and pick up refuse and debris from his work operations in all areas and dispose of properly at the end of each work day.

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1.10 QUALITY CONTROL

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.

1.11 REFERENCE STANDARDS

- A. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

1.12 SPECIFIC EXPLANATION

- A. These specifications are of the brief or "streamlined" type and include incomplete sentences. Omissions of words or phrases such as "The Contractor shall" or "Noted on the drawing", "According to the plans", "a", "an", "the", "and" and "all" are intentional. Omitted words or phrases shall be supplied by inference where a colon (:) is used within sentences or phrases. Words "as per" shall mean that the Contractor shall furnish, install and connect up complete in Operative condition and use, all materials, equipment, apparatus and required appurtenances of the particular item to which it has reference. Where a manufacturer's name is mentioned, words "as manufactured by" or "as made by" shall be understood.
- B. The Contractor shall provide all items, articles, materials, operations or methods listed, mentioned, or shown on drawings and/or herein, including all labor, materials, equipment and incidentals required for their completion.
- C. Wherever words "approved", "satisfactory", "directed", "submitted" or similar words or phrases are used, it shall be assumed that the word "Engineer" follows.
- D. Items indicated on the Drawings, but not specified shall be considered supplied as part of this contract, at no additional cost to Owner or Engineer. The Engineer shall be the sole responsible agent for determining the quality of the product intended.

1.13 EXECUTION, CORRELATION AND INTENT

- A. The organization of the specifications into Divisions, Sections and Articles, and the arrangement of drawings shall not control the Contractor dividing the work among the Subcontractors or in establishing the extent of work to be performed by any trade.

BOUSH STREET GARAGE ELEVATOR MODS

Divisions, Sections, and Articles in the specifications have been introduced for clarity and convenience only. The "Work Included" heading, under each Section is for convenient general reference only and it is not intended that all work reasonably implied or shown be specifically listed under these various headings.

1.14 COPIES FURNISHED AND OWNERSHIP

A. Unless otherwise provided in the Contract Documents, the Contractor will be furnished the following free of charge:

1. Contract Drawings - 3 sets
2. Specifications - 3 sets

Any additional copies of the above required by the Contractor will be furnished to him for the cost of reproduction and handling.

1.15 PROGRESS MEETINGS

A. A preconstruction conference shall be held before work begins. Progress meetings shall be held at least once a month at the site. The Contractor, Engineer and all major Subcontractor trades shall be present to review progress on the project. The Contractor shall prepare minutes of the meeting and distribute copies to all those in attendance.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

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BOUSH STREET GARAGE ELEVATOR MODS

SECTION 01010

SUMMARY OF THE WORK

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 specification sections, apply to work of this section.

1.2 PROJECT DESCRIPTION

The project is generally described as modernization of (1) hydraulic elevator, HVAC, electrical devices, modifications to the fire alarm system, and work in the associated machine room, lobby and hoistway. Also upgrades to the (2) traction elevators, electrical devices and fire alarm system, and work in the associated machine room, lobby and hoistway. The work requires complete cleaning of the hoistway including the pit and windows. All work to be completed in accordance with the drawings and specifications.

1.3 CONTRACTOR USE OF PREMISES

- A. General: Limit use of the premises to construction activities in areas indicated; allow for Owner occupancy and use by the public.
 - 1. Confine operations to areas within contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
 - 2. Keep driveways and entrances serving the premises clear and available to the Owner and the Owner's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
- B. Use of the Existing Building: Maintain the existing building in a weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.

BOUSH STREET GARAGE ELEVATOR MODS

1.4 OWNER OCCUPANCY

- A. Full Owner Occupancy: The Owner will occupy the site and existing buildings during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the work so as not to interfere with the Owner's operations.

PART 2 – PRODUCTS

Not Applicable.

PART 3 – EXECUTION

Not Applicable.

END OF SECTION

BOUSH STREET GARAGE ELEVATOR MODS

SECTION 01045

CUTTING AND PATCHING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 specification sections, apply to work of this section.

1.2 SUMMARY

- A. This section specifies administrative and procedural requirements for cutting and patching.
- B. Refer to other sections for specific requirements and limitations applicable to cutting and patching individual parts of the work.
 - 1. Requirements of this section apply to mechanical and electrical installations. Refer to Division 15 Mechanical, Division 16 Electrical sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.
- C. Demolition of selected portions of the building for alterations is included in section “Selective Demolition”.

1.3 SUBMITTALS

- A. Cutting and Patching Proposal: Approval of procedures for cutting and patching is required before proceeding. Submit a proposal describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:
 - 1. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.
 - 2. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well

BOUSH STREET GARAGE ELEVATOR MODS

as changes in the building's appearance and other significant visual elements.

3. List products to be used and firms or entities that will perform work.
4. Indicate dates when cutting and patching is to be performed.
5. List utilities that will be disrupted or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
6. Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure.
7. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of a part of the work found to be unsatisfactory.

1.4 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural work in a manner that would reduce their load-carrying capacity or load-deflection ratio.
 1. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:
 - a. Bearing walls and retaining walls.
 - b. Structural concrete.
 - c. Structural steel.
 - d. Lintels.
 - e. Equipment supports.
 - f. Piping, ductwork, vessels and equipment.
- B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.
 1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:

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- a. Primary operational systems and equipment.
 - b. Air or smoke barriers.
 - c. Fire protection systems.
 - d. Control systems.
 - e. Communication systems.
 - f. Electrical wiring systems.
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Engineer's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace work cut and patched in a visually unsatisfactory manner.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Use materials that are identical to existing materials. If identical materials are not available, or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Before cutting existing surfaces, examine the surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.
- B. Before proceeding, meet at the site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.2 PREPARATION

- A. Temporary Support: To prevent failure provide support of work to be cut.

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- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.
 - 1. In general, where cutting is required use hand or small power tool designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.
 - 4. By-pass utility services such as pipe and conduit, before cutting, where services are shown or required to be removed, relocated or abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

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- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 3. Where removal of flooring extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.
 - a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch, after the patched area has received prime and second coat.
 4. Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

3.4 CLEANING

Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION

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BOUSH STREET GARAGE ELEVATOR MODS

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Procedures.
- B. Submittal Register.
- C. Schedule of Values.
- D. Shop Drawings.
- E. Product Data.
- F. Manufacturer's Certificates.
- G. Manufacturer's Instructions.

1.2 RELATED REQUIREMENTS

- A. Section 01005 - Administrative Provisions
- B. Section 01700 - Contract Closeout

1.3 PROCEDURES

- A. Deliver submittals to PACE Collaborative, P.C., 1277 Perimeter Parkway, Virginia Beach, VA 23454. Provide eight (8) copies of each submittal - five (5) for review and distribution and three (3) for Operating and Maintenance (O&M) manuals.
- B. Transmit each item under Contractor's Standard Transmittal forms. Identify Project, Contractor, subcontractor, major supplier; identify pertinent Drawing sheet and detail number, and Specification section number, as appropriate. Identify deviations from Contract Documents clearly. Provide space for Contractor and Engineer review stamps. Indicate each item separately by Submittal Number 1, 2, 3, etc. All re-submitted items shall bear that same

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number with "A" after the first re-submittal, "B" after the second re-submittal, etc., until final approval is received.

- C. Submit initial progress schedules, schedule of values in duplicate within 10 days after date of Owner-Contractor Agreement. After review by Engineer revise and resubmit as required. Submit revised schedules with each Application for Payment, reflecting changes since previous submittal.
- D. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- E. All copies of items submitted for approval shall bear the stamp indicated in the General Conditions.
- F. After Engineer review of submittal, revise and resubmit as required, identifying changes made since previous submittal.
- G. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

1.4 SUBMITTAL REGISTER

- A. Refer to Submittal Register at end of this Section as an example. Refer to individual Sections for items requiring submittals.
- B. Submit a Submittal Register of items required for Submittal and for requests for deviation and changes, within 15 days after Date of Owner-Contractor Agreement.
- C. Submittals for specified manufacturers and products not required by individual specification sections will be returned to the Contractor without action. Submittals for deviations or proposed equals will be processed as specified in Section 01600.

1.5 SCHEDULE OF VALUES

- A. Refer to Schedule of Values at end of this Section as an example.
- B. Submit typed schedule on Contractor's standard form or media-driven printout.

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- C. Format: Table of Contents of this Project Manual. Identify each line item with number and title of the major Specifications Sections.
- D. Include in each line item a directly proportional amount of Contractor's overhead and profit.
- E. Revise schedule to list change orders, for each application for payment.

1.6 SHOP DRAWINGS

- A. Submit in accordance with the requirements of the General Conditions of the Construction Contract.

1.7 PRODUCT DATA

- A. Mark each copy clearly to identify applicable products, models, options, and other data; supplement manufacturers' standard data to provide information unique to the Work. **It is the Contractor's "Sub-Contractor's" responsibility to highlight each item on the submittals indicating each component as it pertains to specific requirements of each paragraph number.** Submittals not indicated as mentioned above will be returned for re-submittal.

1.8 MANUFACTURER'S CERTIFICATES

- A. When required by individual specifications section, submit manufacturer's certificate in duplicate, that products meet or exceed specified requirements.

1.9 MANUFACTURER'S INSTRUCTIONS

- A. When required by individual specifications section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing.

PART 2 - PRODUCTS

Not Used

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PART 3 - EXECUTION

Not Used

END OF SECTION

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DGS-30-104 (FORM CO-12) (Rev. 08/07)	SCHEDULE OF VALUES and CERTIFICATE FOR PAYMENT	PAYMENT REQUEST NO. <div style="border: 1px solid black; padding: 2px; text-align: center;">1</div>	PERIOD BEGINNING DATE: 01/00/1900 PERIOD ENDING DATE: 01/00/1900
PART A SUMMARY AND CERTIFICATION			

PROJECT CODE: 0
AGENCY NAME: 0
PROJECT TITLE: 0

	TOTAL VALUE	VALUE OF WORK COMPLETED			PERCENT COMPLETE
		PREVIOUS VALUE TO DATE	VALUE THIS REPORT	CURRENT VALUE TO DATE	
	A	B	C	D = B + C	E = D / A
Original Contract Line Items (from CO-12, PART B)	\$ -	\$ -	\$ -	\$ -	0%
Approved Change Orders (from CO-12, PART C)	\$ -	\$ -	\$ -	\$ -	0%
ADJUSTED CONTRACT TOTAL	\$ -	\$ -	\$ -	\$ -	0%
Retainage <i>Retainage Percentage: 5.0%</i>		\$ -	\$ -	\$ -	
NET REQUISITION AMOUNT		\$ -	\$ -	\$ -	

Amount Requested

CONTRACTOR CERTIFICATION

The undersigned Contractor requests payment of that portion of the contract price shown on the last line of the foregoing Schedule of Values, and represents and warrants to the Owner that: (1) the data shown on the Schedule of Values is accurate and correct; (2) the Work covered by this Certificate has been completed in accordance with the Contract Documents; (3) all previous progress payments received from Owner on account of Work done under this Contract have been applied to discharge in full (except for allowable retainage) all obligations of Contractor incurred in connection with Work covered by prior Certificates for Payment (N/A for Payment No. 1) ; (4) title to all materials and equipment for which payment is requested in this Certificate, whether or not incorporated in said Work, will pass to Owner at time of payment free and clear of all liens, claims, security interests and encumbrances (except such materials and equipment which are covered by a Bond previously accepted by Owner).

FEIN #: 0

Date: January 0, 1900

Contractor:

By: _____

signature

Typed Name: 0

0

ARCHITECT/ENGINEER CERTIFICATION

This is to certify that, in accordance with the terms of a contract for Project Number executed the day of , by and between, , the contractor, and the Commonwealth of Virginia, , the Owner, for work at , there is due to the Contractor the amount of No Dollars and No Cents \$.00

Architect/Engineer:

By: _____

signature
printed name
date

AGENCY ACTION

Amount approved for payment this certificate is: _____

_____ Dollars (_____)

By: _____

signature
title
date

By: _____

signature
title
date

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BOUSH STREET GARAGE ELEVATOR MODS

SECTION 01400

QUALITY CONTROL SERVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for Quality Control Services.
- B. Quality control services are also required in the following sections:
 - 1. Testing and inspection of all wiring and joints.
 - 2. Specific requirements for inspections are noted in the technical sections of the specifications.
- C. Quality control services include inspections and tests and related actions including reports, performed by the Special Inspector or independent agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the Engineer.
- D. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services in no way relieve the Contractor of responsibility to furnish materials and construction in full compliance with Contract Document requirements.

1.3 RESPONSIBILITIES

- A. Contractor Responsibilities: The Contractor shall provide inspections, tests and similar quality control services, as specified and as required by governing authorities, except where they are specifically indicated to be the Owner's responsibility.

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1. Retesting: The Contractor is responsible for retesting where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Contractor's responsibility.
 - a. Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.
2. Associated Services: The Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to allow for completion of quality tests and for the assignment of personnel. Auxiliary services required include but are not limited to:
 - a. Providing access to the Work and furnishing labor and facilities necessary to facilitate inspections and tests at the Project or other source of material.
- B. Duties of the Engineer: The Engineer of record, in accord with their contract, shall visit the site to assure general conformance with the design intent shown in the documents.
- C. Coordination: The Contractor shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition the Contractor shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
 1. The Contractor is responsible for scheduling times for inspections, tests, and similar activities.

1.4 SUBMITTALS

- A. The Contractor shall submit a certified written report of each inspection, test or similar service in duplicate to the Engineer and to the Owner.
 1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.

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2. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to:
 - a. Date of issue.
 - b. Project title and number.
 - c. Name, address and telephone number of testing agency.
 - d. Dates and locations of samples and tests or inspections.
 - e. Names of individuals making the inspection or test.
 - f. Designation of the Work and test method.
 - g. Identification of product and Specification Section.
 - h. Complete inspection or test data.
 - i. Test results and an interpretations of test results.
 - j. Ambient conditions at the time of sample-taking and testing.
 - k. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
 - l. Recommendations on retesting.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, and similar services the Contractor shall repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes.

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- B. The Contractor shall protect construction exposed by or for quality control service activities, and protect repaired construction.
- C. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION

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SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONSTRUCTION CONTROLS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Electricity, Lighting.
- B. Telephone Service.
- C. Water.
- D. Sanitary Facilities.
- E. Barriers.
- F. Enclosures.
- G. Protection of Installed Work.
- H. Cleaning During Construction.
- I. Removal of Material.
- J. Contractor's Office.
- K. Access.
- L. Interruption of Services.
- M. Owner's Safety Requirements.
- N. Limits of Construction Operations.
- O. Hazardous Materials.

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1.2 RELATED REQUIREMENTS

- A. Section 01005 - Administrative Provisions: Contractor use of premises.
- B. Section 01700 - Contract Closeout: Final Cleaning.

1.3 ELECTRICITY LIGHTING

- A. Reasonable amounts of electricity will be made available to the contractor for the project. The contractor shall be responsible for extending the electricity to the specific required locations within the project.
- B. Provide portable temporary lighting for construction operations.
- C. Existing permanent lighting may be used during construction. Maintain lighting and make routing repairs.

1.4 TELEPHONE SERVICE

- A. Provide and pay for telephone service to field office.
- B. Contractor shall be responsible for installation and local service fees.

1.5 WATER

- A. Reasonable amounts of water will be provided. The contractor shall be responsible for extending branch piping with outlets located so that water is available by use of hoses.

1.6 SANITARY FACILITIES

- A. The Contractor shall provide sanitary facilities for all contractor personnel. The use of the Owner's facility is not allowed.

1.7 BARRIERS

- A. Provide as required to prevent public entry to construction areas and to protect site and construction and adjacent properties from damage from construction operation.

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1.8 ENCLOSURES

- A. Provide temporary weather-tight closures of openings in exterior surfaces to provide acceptable working conditions and protection for materials, to allow for temporary heating, and to prevent entry of unauthorized persons. Provide doors with self-closing hardware and locks.

1.9 PROTECTION OF INSTALLED WORK

- A. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
- B. Provide protective coverings on roof membrane and surface and at walls, projections, jambs, sills, and soffits of openings. Protect finished floors and stairs from traffic, movement of heavy objects, and storage.
- C. Prohibit traffic and storage on waterproofed and roofed surfaces, on lawn and landscaped areas.

1.10 CLEANING DURING CONSTRUCTION

- A. Control accumulation of waste materials and rubbish; dispose of off-site, minimum once a day, more often as required or directed.
- B. Clean interior areas prior to start of painting work, maintain areas free of dust and other contaminants during painting operations.
- C. Disposal of solid waste in open dumps is prohibited.

1.11 REMOVAL OF MATERIAL

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion Inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.

1.12 CONTRACTOR'S OFFICE

- A. The Contractor shall provide a secure area or areas offsite for the Contractor's use as an office and for the storage of materials which shall be incorporated into the work. The Contractor shall be responsible for keeping these areas in order and assure that no damage is done within these areas. Contractor shall bring materials from his

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secured offsite storage area as needed and as required.

1.13 ACCESS

- A. The Contractor shall be furnished keys for access into mechanical equipment areas and other areas in which he may require access for execution of the work. The Contractor shall be responsible for the security of those areas in which the work is in progress.
 - 1. Any evidence of unauthorized entry, theft or vandalism shall be reported immediately to the Owner.
 - 2. All doors or entrances to mechanical equipment areas or other secure areas must be locked and secured at the end of each work day.

1.14 INTERRUPTION OF SERVICES

- A. The Contractor shall perform all work under this project in such a manner as to cause the least amount of interruption to normal facility operations. The Contractor shall maintain necessary services to accomplish his work and also to permit the normal function of the facility.
- B. The Contractor shall not stop or secure any piece of equipment or service which is vital to the normal operation of the facility without the consent of the Owner.
- C. All equipment shutdowns or service interruptions which are necessary to carry out the work shall be coordinated with the Owner.

1.15 OWNERS' SAFETY REQUIREMENTS

- A. The Contractor shall adhere to and obey all safety related requirements set forth by the Owner, including but not limited to, emergency evacuation in the event of fire.

1.16 LIMITS OF CONSTRUCTION OPERATIONS

- A. WORK LOCATION
 - 1. The Contractor shall limit his work to the actual locations of the work.

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B. VEHICLES

1. Contractor's vehicles may be parked within designated areas of the parking lot.

C. ENTRANCES

1. Building access will be through the service entrances.

D. STORAGE SIZE AND LOCATION

1. The open site available for storage shall be as indicated on drawings or coordinated with Owner/Owner's representative.

1.17 HAZARDOUS MATERIALS

- A. No materials which contain asbestos in any form shall be used on this project.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

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SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Products.
- B. Transportation and Handling.
- C. Storage and Protection.
- D. Product Options.
- E. Products List.
- F. Approved Equals.
- G. Systems Demonstration.

1.2 RELATED REQUIREMENTS

- A. Section 01300 - Submittals
- B. Section 01700 - Contract Closeout

1.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content

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materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

1.4 PRODUCTS

- A. Products include material, equipment, and systems.
- B. Comply with Specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a Specification section shall be the same, and shall be interchangeable.

1.5 TRANSPORTATION AND HANDLING

- A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

1.6 STORAGE AND PROTECTION

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
- C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.

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- D. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.

1.7 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description only: Any product meeting those standards.

1.8 PRODUCTS LIST

- A. Within 15 days after date of Owner-Contractor Agreement, submit complete lists of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

1.9 APPROVED EQUAL / COMPARABLE PRODUCT

- A. Document each request with complete data substantiating compliance of proposed product with Contract documents.
- B. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Engineer will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Division 1 Section "Submittals."
 - b. Use product specified if Engineer cannot make a decision on use of a comparable product request within time allocated.
- C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittals." Show compliance with requirements.
- D. Comparable Products:
 - 1. Conditions: Engineer will consider Contractor's request for comparable product when the following conditions are satisfied. If the following

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conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

- a. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
- b. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
- c. Evidence that proposed product provides specified warranty.
- d. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
- e. Samples, if requested.

E. Request constitutes a representation that Contractor:

1. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
2. Will provide the same warranty for proposed product as for specified product.
3. Will coordinate installation and make other changes which may be required for Work to be complete in all respects.
4. Waives claims for additional costs which may subsequently become apparent.

F. Approved Equals will not be considered when they are indicated or implied on shop drawings or product data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.

G. Engineer will determine acceptability of proposed equal product, and will notify Contractor of acceptance or rejection in writing within a reasonable time.

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- H. Only one request for proposed equal will be considered for each product. If proposed equal is not accepted, provide specified item.

1.10 SYSTEMS DEMONSTRATION

- A. Prior to final inspection, demonstrate operation of each system to Engineer and Owner.
- B. Instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

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SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Closeout Procedures.
- B. Final Cleaning.
- C. Project Record Documents.
- D. Operation and Maintenance Data.
- E. Warranties and Bonds.
- F. Spare Parts and Maintenance Materials.

1.2 RELATED REQUIREMENTS

- A. Section 01500 - Construction Facilities and Temporary Controls: Cleaning during construction.

1.3 CLOSEOUT PROCEDURES

- A. When Contractor considers Work has reached final completion, submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's inspection.
- B. In addition to submittals required by the conditions of the Contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjustment Contract Sum, previous payments, and sum remaining due.

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- C. PACE Collaborative, P.C. will issue a final Change Order reflecting approved adjustments to Contract Sum not previously made by Change Order.

1.4 FINAL CLEANING

- A. Execute prior to final inspection.
- B. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum soft surfaces. Clean equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment. Clean roofs, floor drains and drainage systems.
- C. Clean site: Remove all construction debris and return site to its natural condition.

1.5 PROJECT RECORD DOCUMENT

- A. Following Award of Contract, the Engineer will supply the Contractor with one set of black line prints and one extra project manual. This set shall be used for all as-built conditions. Indicate all changes in red pencil.
- B. Store documents separate for those used in construction.
- C. Keep documents current; do not permanently conceal any work until required information has been recorded.
- D. At Contract closeout, submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor, attesting to accuracy of As-Built Documents.

1.6 OPERATION AND MAINTENANCE DATA

- A. Provide data for:
 - 1. Mechanical equipment and controls - Division 15.
 - 2. Electrical equipment and controls - Division 16.
 - 3. Other equipment or products as required by individual specification Sections.
- B. Submit three sets prior to final inspection, bound in 8 1/2 x 11 inch three-ring binders with durable plastic covers.

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- C. Part 1: Directory, listing names, addresses, and telephone numbers of: Engineer, Contractor, and all Sub-contractors with contact name of person most familiar with the project.
- D. Part 2: Operation and maintenance instructions, beginning with a Table of Contents, arranged by system or product with appropriate tabs in order as they appear in the Project. For each system or product, give names, addresses, and telephone numbers of subcontractors and suppliers.
 - 1. Appropriate design criteria.
 - 2. List of equipment, as applicable.
 - 3. Parts list.
 - 4. Operating instructions, as applicable.
 - 5. Maintenance instructions, equipment.
 - 6. Maintenance instructions, finishes.
 - 7. Shop drawings and product data.
 - 8. Warranties, as applicable.

1.7 WARRANTIES AND BONDS

- A. Provide duplicate, notarized copies. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.
- B. Submit material prior to final application for payment. For equipment put into use with Owner's permission during construction, submit within 10 days after first operation. For items of Work delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.8 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, and maintenance materials in quantities specified in each Section, in addition to that used for construction of Work. Coordinate with Owner, deliver to Project Site and obtain receipt prior to final payment.

PART 2 - PRODUCTS

Not Used

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PART 3 - EXECUTION

Not Used

END OF SECTION

BOUSH STREET GARAGE ELEVATOR MODS

SECTION 02070

SELECTIVE DEMOLITION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

- A. Extent of selective demolition work is indicated on drawings.
- B. Type of Selective Demolition Work: Demolition requires the selective removal and subsequent offsite disposal of the following:
 - 1. Removal of existing light fixtures, diffusers, floor finishes, fixed seating, electrical wiring, ductwork, as indicated on drawings.
 - 2. Removal and protection of existing fixtures and equipment items indicated.
- C. Related work specified elsewhere:
 - 1. Remodeling construction work and patching is included within the respective sections of specifications, including removal of materials for re-use and incorporated into remodeling or new construction.
 - 2. Relocation and/or removal and reinstallation of pipes, conduits, ducts, other mechanical and electrical work are specified by respective trades.

1.3 SUBMITTALS

- A. Schedule: Submit schedule indicating proposed methods and sequence of operations for selective demolition work to Owner's Representative for review prior to commencement of work. Include coordination for shut-off, capping, and continuation of utility services as required, together with details for dust and noise control protection.

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1. Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
2. Coordinate with Owner's continuing occupation of portions of existing building, with Owner's partial occupancy of completed new addition, and with Owner's reduced usage during summer months.

1.4 JOB CONDITIONS

- A. Occupancy: Owner will be continuously occupying areas of the building immediately adjacent to areas of selective demolition. Conduct selective demolition work in manner that will minimize need for disruption of Owner's normal operations. Provide minimum of 72 hours advance notice to Owner of demolition activities which will severely impact Owner's normal operations.
- B. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.
 1. Conditions existing at time of commencement of contract will be maintained by Owner insofar as practicable. However, variations within structure may occur by Owner's removal and salvage operations prior to start of selective demolition work.
- C. Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor may be removed from structure as work progresses. Transport salvaged items from site as they are removed.
 1. Storage or sale of removed items on site will not be permitted.
- D. Protections: Provide temporary barricades and other forms of protection as required to protect Owner's personnel and general public from injury due to selective demolition work.
 1. Provide protective measures as required to provide free and safe passage of Owner's personnel and general public to and from occupied portions of building.
 2. Erect temporary covered passageways as required by authorities having jurisdiction.

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3. Provide interior bracing or support to prevent movement, settlement, or collapse of structure or element to be demolished, and adjacent facilities or work to remain.
 4. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
 5. Protect floors with suitable coverings when necessary.
 6. Construct temporary insulated solid dustproof partitions where required to separate areas where noisy or extensive dirt or dust operations are performed. Equip partitions with dustproof doors and security locks as required.
 7. Provide temporary weather protection during interval between demolition and removal of existing construction on exterior surfaces, and installation of new construction to insure that no water leakage or damage occurs to structure or interior areas of existing building.
 8. Remove protections at completion of work.
- E. Damages: Promptly repair damages caused to adjacent facilities by demolition work at no cost to Owner.
- F. Traffic: Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
1. Do not close, block or otherwise obstruct streets, walks or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- G. Explosives: Use of explosives will not be permitted.
- H. Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.
- I. Environmental Controls: Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulations pertaining to environmental protection.

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1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.

PART 2 – PRODUCTS

Not Applicable.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Prior to commencement of selective demolition work, inspect areas in which work will be performed. Photograph existing conditions of structural surfaces, equipment or of surrounding properties which could be misconstrued as damage resulting from selective demolition work; file with Owner's Representative prior to starting work.

3.2 PREPARATION

- A. Provide interior bracing or support to prevent movement, settlement or collapse of structures to be demolished and adjacent facilities to remain.
 1. Cease operations and notify the Owner's Representative immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.
- B. Cover and protect furniture, equipment and fixtures to remain from soiling or damage when demolition work is performed in rooms or areas from which such items have not been removed.
- C. Erect and maintain dust-proof partitions and closures as required to prevent spread of dust or fumes to occupied portions of the building.
- D. Locate, identify, stub off and disconnect utility services that are not indicated to remain.
 1. Provide by-pass connections as necessary to maintain continuity of service to occupied areas of building. Provide minimum of 72 hours advance notice to Owner if shut-down of service is necessary during change-over.

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3.3 DEMOLITION

- A. Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.
 - 1. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain using power-driven masonry saw or hand tools; do not use power-driven impact tools.
 - 2. Locate demolition equipment throughout structure and promptly remove debris to avoid imposing excessive loads on supporting walls, floors or framing.
 - 3. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction.
- B. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Owner's Representative in written, accurate detail. Pending receipt of directive from Owner's Representative rearrange selective demolition schedule as necessary to continue overall job progress without delay.

3.4 SALVAGE MATERIALS

- A. Salvage Items: Where indicated on Drawings as "Salvage-Deliver to Owner", carefully remove indicated items, clean, store and turn over to Owner and obtain receipt.
 - 1. Historic artifacts, including cornerstones and their contents, commemorative plaques and tablets, antiques, and other articles of historic significance remain the property of the Owner. Notify Owner's Representative if such items are encountered and obtain acceptance regarding method of removal and salvage for Owner.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove debris, rubbish and other materials resulting from demolition operations from building site. Transport and legally dispose of materials off site.

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1. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling and protection against exposure or environmental pollution.
2. Burning of removed materials is not permitted on project site.

3.6 CLEAN-UP AND REPAIR

- A. Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.
- B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION

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SECTION 14210

ELECTRIC TRACTION ELEVATORS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes:

Electric Traction Passenger Elevators as shown and specified. Elevator work includes:

1. Existing Commercial, standard pre-engineered electric traction passenger elevators.
2. Existing Elevator car enclosures, hoistway entrances and signal equipment.
3. Existing Machines (alternate bid)
4. Operation and control systems.
5. Accessibility provisions for physically disabled persons.
6. Existing Equipment, machine, controls, systems and devices as required for safely operating the specified elevator at its rated speed and capacity.
7. Materials and accessories as required to complete the elevator installation.

B. Related Sections:

Division 15 Sections:

1. Heating and ventilating hoistway and machine room.

Division 16 Sections:

1. Providing electrical service to elevators, including fused disconnect switches.

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2. Heat and smoke sensing devices.
3. Convenience outlets and illumination in machine room, hoistway and pit.

1.2 SUBMITTALS

Prior to commencement of fabrication, provide operating fixture details, hoistway layout, drive machine, controllers, car sling, counterweight, frame, cab and finish samples for selection. It is the contractor's responsibility to examine, measure and otherwise determine that work can be performed as specified. Any discrepancies or ambiguities found in the specifications shall be reported to the City immediately for resolution.

A. Product data:

1. Submit product data for all replaced systems including the following:
 - a. Elevator car enclosure changes.
 - b. Hoistway doors.
 - c. Car doors
 - d. Traction Machine
 - e. Operating systems.
 - f. Control systems.
 - g. Fixture and Signal systems.
 - h. Door Operation systems.
 - i. Governor and tensioning system
 - j. Unintended movement device

B. Shop drawings:

1. Show equipment arrangement in the machine room, pit and hoistway to confirm code compliance for clearances, heat loads, etc.

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2. Indicate elevator system capacities, sizes, performances, safety features, finishes and other pertinent information.
 3. Indicate electrical power requirements and branch circuit protection device recommendations
- C. Color selection:
1. Submit color charts of exposed finishes and materials for color selection.
 2. Submit samples of exposed finishes and materials selected for the elevator system materials and components.
- D. Certificates:
1. Inspection and acceptance certificates of elevator system installation.

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
1. An approved manufacturer regularly engaged in manufacturing, installing and servicing elevators of the type required for this project.
 2. The manufacturer of the machine, controller, signal fixtures, door operators, cab, entrances, and all other major parts of the elevator operating equipment.
 3. The major parts of the elevator equipment shall be manufactured in the United States, and not be an assembled system.
 4. The manufacturer shall have a documented, on-going quality assurance program.
- B. Contractor Requirements:
1. The contractor must be a Class-A licensed Elevator Contractor in The State of Virginia. The Contractor must have been performing elevator maintenance, service repairs and new construction for a minimum of five years.
 2. All Elevator Contractor employees performing services and work on the elevator listed in this contract specifications, must show proof, upon

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request, of school training on elevator service work, repair work and new construction. Approved training that will only be accepted will be Elevator Manufacturers Training School/ Workshops, International Union of Elevator Contractors, National Association of Elevator Contractors- CET Training and ASME Certification and State of Virginia Elevator Certification.

C. Regulatory Requirements:

1. ASME A17.1b-2009 Safety Code for Elevators and Escalators.
2. International Building Code.
3. Commonwealth of Virginia USBC
4. NFPA 70 National Electrical Code.
5. NFPA 80 Fire Doors and Windows.
6. Americans with Disabilities Act - Accessibility Guidelines (ADAAG).

D. Inspection and testing:

1. Elevator Installer shall obtain from The Authority Having Jurisdiction and pay for all required inspections, tests, permits and fees for elevator installation.
2. Arrange for inspections and make required tests.
3. Deliver to the Building Owner upon completion and acceptance of elevator work.

E. Operation and Maintenance data.

1. Operation and maintenance instructions.
2. Parts list, with recommended parts inventory.
3. Upon completion and prior to final acceptance of the installation provide the following:

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- a Two (2) complete sets of detailed wiring diagrams to CITY of NORFOLK, VIRGINIA
- b One (1) complete set of laminated detailed wiring diagrams in the elevator equipment room for maintenance use.
- c Two (2) complete sets of operating instructions and maintenance manuals to CITY of NORFOLK, VIRGINIA and one (1) complete set laminated in the elevator equipment room fully describing the following:
 - 1) Operation of dispatch and motion control systems, maintenance, testing and adjusting procedures.
 - 2) Recommended replacement parts with part numbers and lubricants. Provide all specialty instruments, tools or equipment necessary for maintenance and service of the elevators. All programming, installation and maintenance tools are to be included. All updates to these tools will be provided, at no charge, to the owner. Ownership of said instruments, tools or equipment provided will be conveyed to the CITY of NORFOLK, VIRGINIA upon completion and final acceptance of the elevator and will be retained on-site in a location to be designated by the CITY of NORFOLK, VIRGINIA.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver elevator materials, components and equipment in manufacturer's protective packaging.
- B. Store materials in a dry protected area provided by others.
- C. Protect and handle materials in accordance with manufacturer's recommendations to prevent damage, soiling, or deterioration.

1.5 PROJECT CONDITIONS

- A. Prohibited Use:
 - 1. Elevator shall not be used as a construction hoist during the construction period before Substantial Completion. Only one elevator to be down at

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any time unless coordinated with the owner and for transferring the hall call control to new fixture and first completed car.

B. Painting:

1. Except as otherwise specified, paint all metal work provided by the elevator manufacturer and installer.
2. Provide all ferrous metals installed in the hoistway shop primed with rust inhibitive primer.
3. Clean and repaint hoistway and pit equipment such as but not limited to: rails except for machined surfaces, car stiles, crosshead, bolster plate and channel, door headers and dustcovers. Hoistway walls, ceiling and pit to be repainted with similar color or as selected by owner.

1.6 WARRANTY

- A. Submit elevator manufacturer's standard written warranty agreeing to repair, restore or replace defects in elevator work materials and workmanship not due to ordinary wear and tear or improper use or care for 12 months from date of Total Completion.

1.7 MAINTENANCE

- A. Furnish maintenance and call back service for a period of 12 months for the elevator from date of Total Completion.
- B. Service shall consist of periodic examination of the equipment, adjustment, lubrication, cleaning, supplies and parts to keep the elevators in proper operation.
- C. Maintenance work, including emergency call back repair service, shall be performed by trained employees of the elevator contractor during regular working hours.
- D. Submit parts catalog and show evidence of local parts inventory with complete list of recommended spare parts.
- E. Parts shall be produced by manufacturer of original equipment.
- F. Manufacturer shall have a service office and full time service personnel within a 50 mile radius of the project site.

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1.8 REMOVAL OF OLD EQUIPMENT

- A. Furnish all required labor and tooling to remove and dispose of the affected elevator parts and equipment, less hoistway door frames and sills. Owner reserves the right to reclaim used parts.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

NO PROPRIETARY SOFTWARE, HARDWARE OR EQUIPMENT SHALL BE USED ON THIS PROJECT.

Elevator controller and system components installed, supplied, and/or provided shall be manufacturer's non-proprietary equipment whereas any elevator company shall be allowed to purchase, install, and service the equipment.

Equipment and component systems shall not employ any proprietary designs that could hamper and/or otherwise prohibit subsequent maintenance, repairs or adjustments by qualified contractors.

Controller Manufacturers shall provide replacement parts on the open market to all maintenance/service providers for equipment and component systems for as long as said parts are available to ensure control systems remain maintainable regardless of who may be selected for future service.

Engineering & Technical support will be provided by the original equipment manufacturer to any maintaining contractor so designated by the building owner or Management Company

The elevator controller shall be provided together with all available diagnostic tool functionality, either onboard or in a separate device/interface for the sole purpose of periodic maintenance, adjustment and troubleshooting the system while providing unrestricted access to all parameters, levels of adjustment, and flags necessary for maintenance, repair or adjustment of equipment.

Contractor shall deliver to the Owner, printed or on-line "adjuster-level" help instructions for the proper use of any tool that may be necessary to perform diagnostic evaluations, adjustments and/or programmable software changes on any unit of microprocessor-based elevator control equipment installed by the Contractor. Accompanying these instructions shall be any and all access codes, passwords,

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nomenclature or other information that is necessary to interface the tool with the microprocessor control equipment.

A. Manufacturers:

THESE MANUFACTURERS MAY BE USED OR EQUAL TO:

1. Fixtures – PTL Equipment Manufacturing Company Inc.
2. Machine – Hollister Whitney
3. Governor and tension system- Hollister Whitney.
4. Car Roller Guides – Elevator Safety Company (ELSCO).
5. Door Operators and all Related Equipment – G.A.L. Manufacturing Corporation.
6. Hatch Door Frames and all Doors – Tyler Elevator Products
7. Operation Control Systems, Selector and Limit Switches –MCE, Virginia Controls.
8. Cab interior- Snap Cab.
9. Unintended movement device-Hollister Whitney

2.2 MATERIALS, GENERAL

Colors, patterns, and finishes:

A. Steel:

1. Shapes and bars: ASTM A 36.
2. Sheet: ASTM A 366, cold-rolled steel sheet, commercial quality, Class 1, matte finish, stretcher leveled.
3. Finish: Factory-applied baked enamel.

B. Stainless steel:

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1. Shapes and bars: ASTM A 276, Type 300 (18-8).

2. Tubing: ASTM A 269, Type 300 (18-8).

C. Bronze:

1. Drawn pipe: ASTM B 43, alloy UNS C23000, red brass.

2. Sheet: ASTM B 36, alloy UNS C28000, muntz metal.

3. Extrusions: ASTM B 455, alloy UNS C38500, architectural bronze.

D. Aluminum:

1. Sheet and plate: ASTM B 209, alloy 6063-T52.

2. Extrusions: ASTM B 221, alloy 6063-T52.

E. Nickel silver:

1. ASTM B 151 extrusions, alloy UNS No. C74500, polished finish.

F. Plastic laminate:

1. Decorative high-pressure type, complying with NEMA LD3, Type GP-50 General Purpose Grade, nominal 0.050" thickness.

G. Wood:

1. Fire rated

H. Glass:

1. Clear laminated safety glass, complying with ANSI Z97.1, nominal 9/16" thickness.

I. Rubber Matting:

1. Rubber matting conforming to ASME A17.1 Part 2.14. Design to be raised "coin" type, in single piece construction.

2.3 HOISTWAY EQUIPMENT

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A. Platforms:

1. RETAIN EXISTING. Clean and repaint interior and exterior with rust preventative paint.

B. Slings:

1. RETAIN EXISTING. Clean and repaint accessible surfaces with rust preventative paint.

C. Guide Rails:

1. RETAIN EXISTING – Clean and paint.

D. Guide Shoes:

1. REPLACE: Roller Guides shall be on top and bottom of the car and counterweight.

E. Buffers:

1. RETAIN EXISTING. Clean and repaint buffer channels, stands and all pit equipment with rust preventative paint. Polish plunger to like new finish. Drain and refill with proper oil.

F. Terminal Limits:

1. Install new terminal limits to operate per code.

G. Automatic Self-Leveling:

1. Provide the elevator car with a self-leveling feature to automatically bring the car to the floor landings and correct for over-travel or under-travel.
2. Self-leveling shall, within its zone, be automatic and independent of the operating device.
3. The car shall be maintained approximately level within +1/4" of the landing irrespective of its load or direction of travel.

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4. Automatic self leveling shall be accomplished by an encoder device or microprocessor device mounted on the elevator car.

H. Failure Protection:

1. Design electrical control circuit so if the car fails to reach a landing within a pre-determined time, the elevator car will attempt to automatically proceed to the nearest landing.
2. The doors will automatically open when the car reaches that landing to allow passengers to depart.
3. The doors will then automatically close and all control buttons, except the "door open" button in the car station, shall be made inoperative. Car will be rendered out of service.

I. Wiring and Electrical Conduit:

1. Provide all new hoistway wiring in accordance with the National Electrical Code. Existing conduits may be used provided they meet all NEC requirements.
2. Existing conduit and ducts may be reused and are in compliance with NEC.

J. Emergency Terminal Stopping Device:

1. Provide new emergency terminal stopping devices and shall operate per code.
2. The emergency terminal stopping device shall operate independently of the normal terminal stopping device if it fails to slow down the car at the terminal as intended.
3. Stopping devices shall not be prevented from functioning by a single short circuit caused by a combination of grounds or by other conditions.

K. Pit Ladder:

1. Replace pit ladders with code compliant units.

L. Safeties

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1. Retain Existing, clean, adjust and lubricate for proper operation.

2.4 MACHINE ROOM

A. Hoist Machine:

1. Machine:
(TO BE RETAINED) Install new brake pads and AC drive motor. Clean, seal and paint.
2. Drive: Variable Voltage Variable Frequency (VVVF) type.
3. Motor: Totally enclosed, non-ventilated VAC motor with Class F insulation. Motor armature shall be dynamically balanced and supported by ball bearings of ample capacity.
4. Control: Vector controlled pulse-width modulated VAC drive. The variable voltage variable frequency drive shall convert the AC power supply using a two step process to a variable voltage variable frequency power supply for use by the hoist motor. Speed control shall be by means of vector control providing independent excitation and torque current. Provide a digital velocity encoder on the motor, giving feedback to the controller on motor speed and position.
5. Deflector Sheaves: Retained: repack and reseal.
6. Rope Gripper: install and adjust for proper operation.

B. Power Controller:

1. The elevator control system shall be microprocessor based. Control of the elevator shall be automatic in operation by means of push buttons in the car and hall.
2. Momentary pressing of one or more buttons shall dispatch the car to the designated landings in a selective collective manner.
3. Control system shall be protected by an enclosure from environmental extremes and excessive vibrations.
4. Automatic:

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- a. Operate Elevator without attendant capable of balancing Duplex service and continuing operation, for future when service car is added.
 - b. Operate the buttons located at each floor and in the car. Registration of calls by momentary pressure on buttons shall cause the cars to respond to passenger demand. Car shall slow down automatically at landings corresponding to calls registered on car and hall buttons. Make stops in the natural order of floors for each direction of travel irrespective of the order in which calls are registered. Simultaneous to initiation of slow down to answer a hall call, cancel that call. Hold hall button ineffective until car doors are closed after passenger transfer. Cancel car calls in the same manner. Cancel car call upon direction reverse.
 - c. Use easily re-programmable system software. Design basic algorithm to optimize service based on equalizing system's response to registered hall calls at shortest possible level and equalizing trip time at the shortest possible level.
- C. Automatic Stopping Accuracy: Stop car within 3/16" above or below the landing sill. Avoid over-travel as well as under travel. Maintain stopping accuracy regardless of load in car, direction of travel, rope slippage or stretch.
- D. Fire Fighter's Service: Provide Fire Fighters Service Phase I & II, per code, to operate and recall elevators to designated or alternate floors in case of fire or other emergency condition. Provide sensor signal wiring from hoistway or machine room connection point to controller terminals. Provide a visual / audible signal until return is complete or automatic operation is restored.
- E. Independent Service: Provide controls for operation of Elevator from car buttons only.
- F. Provide controls for elevator to be taken out of service at top or bottom landing with doors closed.
- G. Emergency Lighting and Alarm: Provide new car-mounted battery unit with solid-state charger to operate alarm bell and lighting, per code. Battery to be rechargeable with a five (5) year minimum life expectancy. Provide test button in service cabinet of car station, which causes illumination of emergency lighting and alarm.

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H. Power Conversions and Regulation:

1. Provide solid state devices.
2. Design solid state unit to limit current, suppress noise and prevent transient voltage feedback into building power supply. Isolate unit to minimize noise and vibration transmission. Provide isolation transformers, filter network and choke inductor.
3. Elevator Contractor's responsibility is to suppress solid state converter noises, rapid frequency interface and eliminate regenerative voltage transients induced into the mainline feeders or the standby power generator.

I. Encoders: Provide appropriate solid state encoders.

2.5 HOISTWAY ENTRANCES

A. Doors and Frames:

1. Re-use complete hollow metal type hoistway entrances and sills at each hoistway opening.
2. Provide and install all new doors panels, hangers, hanger supports, tracks, rollers, gibs, fire tabs and necessary hardware. Replace any missing dust covers and required hoistway fascia.
3. Doors construction to be Stainless steel: ASTM A 167, Type 300 stainless steel panels with No. 4 satin finish.
4. Provide custom made and installed stainless steel wraps over existing hoistway door frames to match doors.
5. Provide new code compliant interlocks and release rollers at all hoistway doors matching door operator.
6. Provide ADA required floor identification pads in door jambs.

2.6 CAR ENCLOSURE

A. INTERIOR

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1. Retain existing cab structure and provide new interior panel system with handrails in appropriate areas. (Snap Cab or equal).
2. Remove existing flooring and repair platform to solid and level condition. Install rubber matting as previously described.
3. Retain canopy and ceiling. Provide new translucent panels and new code compliant fluorescent light fixtures.
4. Refinish Cab Columns, Front, and Transom to like new condition.
5. Replace car doors with Stainless steel ASTM A 167, Type 300 stainless steel panels, No. 4 satin finish.

B. CAR TOP

1. Replace car ventilation fan with 2 speed fan mounted on the car top with battery back-up.
2. Provide new code compliant Car Top Inspection on car top.

2.7 DOOR OPERATION

A. Door Operation

1. Provide a VVVF heavy duty operator designed to operate the car and hoistway doors simultaneously.
2. Doors shall automatically open when the car arrives at the landing and automatically close after an adjustable time interval or when the car is dispatched to another landing. Direct drive geared operators, AC controlled units with oil checks or other deviations are not acceptable.
3. Nudging Operation, doors shall remain open as long as the electronic detector senses the presence of a passenger or object in the door opening.

B. Door Protection Devices

1. Provide a door protection system using microprocessor controlled infrared beam water resistant system with minimum of 40 beams.

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2. The beams shall project across the car opening detecting the presence of a passenger or object. If door movement is obstructed, the doors shall reopen without delay.

2.8 SIGNAL AND CONTROL FIXTURES

Remove existing operating fixtures and signals and replace as follows:

Provide operating fixtures for car and hall stations, fixtures should be located and designed to comply with NEIL, ASME A17.1; UFAS; and ANSI A117.1. Cover plate finish for car interior operating fixtures shall meet code and are to be #4 brushed stainless steel finish. All components are shall be vandal resistant design. All indicator lights shall be "led" type. Replacement units to cover original installations or repair, patch and repaint as necessary.

- A. Car operating panel: Provide new car operating panel and auxiliary panels as necessary with all devices to meet current code.
 1. Car call push buttons and call registered lights.
 2. Fire Service operating panel.
 3. Locate push buttons and other switches as may be required by code. Locate fan, light, independent service, access inspection and other auxiliary switches to provide the operation specified herein in the upper portion of the service panel. Locate to conform to ADA Requirements.
 4. All warning signs, capacity, fire service instructions and required graphics including no smoking symbol, shall be engraved in the new car station. All engraving should be paint filled. Floor call buttons are to read 1, 2, 3, 4, 5 and 6. Floor 1 is main floor and floor 2 is alternate floor.
 5. Provide integral direction arrows and Position Indicator in main car operating panel.
 6. Provide code compliant two-way communication system with self-dialing capabilities. Speaker and actuating button to be an integral part of the car operating push-button panels.
 7. Provide emergency lights, bells and other announcements as needed to comply with ADA-requirements.

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8. Provide emergency communication device to each car for per ASME A17.1b-2009, section 2.27.31.1.4 for emergency personnel responding onsite.
- B. Hall Stations: Provide new hall operating fixtures with all devices to meet current code.
 1. Provide new code compliant flush mounted fixtures at all floors.
 2. Call registered buttons and lights: Provide an integrally mounted light in all landing push buttons. Fire service required equipment at main floor.
 3. “In Case of Fire” pictograph engraved and paint filled.
- C. Hall lanterns:
 1. Provide directional illuminated arrows showing direction of travel of elevator with integral position indicators. Remove existing and replace with new.
 2. Provide bell or chime audible to notify waiting passenger(s) the direction of travel. One ring for up and two rings for down direction.
- D. Access controls:
 1. Provide new access control panels to replace existing.

2.9 SYSTEM DESCRIPTION

- A. Number of Cars: 2 duplexed cars
- B. Capacity: 3,500lbs.
- C. Landings: 7 front, 0 rear.
- D. Speed: 350fpm.
- E. Operation and Motion Control: Microprocessor control. Selective collective/automatic operation.
- F. Power Supply: 480vac/3ph/60HZ (to be confirmed before ordering equipment)

BOUSH STREET GARAGE ELEVATOR MODS

- G. Door Entrances: 42" Door Entrances (TO BE RETAINED) (wrapped with stainless steel # 4 finish.
- H. Hoistway doors: Replace with new stainless steel #4 finish
- I. Traction Machines: Replace (alternate bid)
- J. Rails and brackets: Retain existing.
- K. Buffers: retain existing.
- L. Signal and control fixtures: replace all. Patch or repair original surfaces as necessary.
- M. Unintended movement device: Hollister Whitney or equal.
- N. Wire ropes: replace hoist and governor ropes.
- O. Safeties: retain, adjust and lubricate as necessary.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Before starting elevator installation, inspect hoistway, hoistway openings, pits and machine rooms, as constructed, verify all critical dimensions, and examine supporting structures and all other conditions under which elevator work is to be installed.
- B. Do not proceed with elevator installation until unsatisfactory conditions have been corrected in a manner acceptable to the installer.
- C. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.

3.2 INSTALLATION

- A. Install elevator systems components in accordance with all applicable codes and regulations.
- B. Work shall be performed by competent elevator installation personnel in accordance with ASME A17.1a-2009, manufacturer's installation instructions and approved shop drawings.

BOUSH STREET GARAGE ELEVATOR MODS

- C. Comply with the National Electrical Code for electrical work required during installation.
- D. Perform work with competent, licensed mechanics under the direct control and supervision of the elevator contractors experienced foreman.
- E. Supply in sufficient time for installation by other trades, inserts, anchors, bearing plates, brackets, supports, and bracing including all setting templates and diagrams for placement.
- F. Set jack units-cylinder assembly plumb, centered accurately and shimmed to proper elevation, using centering lugs to prevent dislocation during operation.
- G. Welded construction:
 - 1. Provide welded connections for installation of elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualification of welding operators.
- H. Coordination:
 - 1. Coordinate elevator work with the work of other trades, for proper time and sequence to avoid construction delays. Use benchmarks, lines, and levels designated by the Contractor, to ensure dimensional coordination of the work.
- I. Install machinery, guides, controls, car and all equipment and accessories to provide a quiet smoothly operating installation, free from side sway, oscillation or vibration.
- J. Sound isolation:
 - 1. Mount rotating and vibrating elevator equipment and components on vibration-absorption mounts, designed to effectively prevent the transmission of vibrations to the structure, and eliminate sources of structure-borne noise from the elevator system.
- K. Lubricate operating parts of system, as recommended by manufacturer.

3.3 FIELD QUALITY CONTROL

BOUSH STREET GARAGE ELEVATOR MODS

A. Acceptance testing:

1. Upon completion of the elevator installation and before permitting use of elevator, perform acceptance tests as required and recommended by Code and governing regulations or agencies. Perform other tests, if any, as required by governing regulations or agencies.
2. Advise Owner, Contractor, Engineer, and governing authorities in advance of dates and times tests are to be performed on the elevator with sufficient time for all concerned parties to schedule to be present.
3. Conduct endurance test with full load for 1 hour, running car continuously from floor to floor, up and down.

3.4 ADJUSTING

- ### A.
- Make necessary adjustments of operating devices and equipment to ensure elevator operates smoothly and accurately.

3.5 CLEANING

- ### A.
- Before final acceptance, remove protection from finished surfaces and clean and polish surfaces in accordance with manufacturer's recommendations for type of material and finish provided.
- ### B.
- At completion of elevator work, remove tools, equipment, and surplus materials from site. Clean equipment room and hoistway. Remove trash and debris.

3.6 PROTECTION

- ### A.
- At time of Substantial Completion of elevator work, or portion thereof, provide suitable protective coverings, barriers, devices, signs, or other such methods or procedures to protect elevator work from damage or deterioration.
- ### B.
- Maintain protective measures throughout remainder of construction period.

3.7 DEMONSTRATION

- ### A.
- Instruct Owner's personnel in proper use, operations, and daily maintenance of elevator.

BOUSH STREET GARAGE ELEVATOR MODS

- B. Review emergency provisions, including emergency access and procedures to be followed at time of failure in operation and other building emergencies.
- C. Train Owner's personnel in normal procedures to be followed in checking for sources of operational failures or malfunctions.
- D. Make a final check of elevator operation, with Owner's personnel present, immediately before date of substantial completion.
- E. Determine that control systems and operating devices are functioning properly.

END OF SECTION

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BOUSH STREET GARAGE ELEVATOR MODS

SECTION 14240

HYDRAULIC ELEVATORS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes:

Hydraulic Passenger Elevators as shown and specified. Elevator work includes:

1. Existing Commercial, standard pre-engineered hydraulic passenger elevators.
2. Existing Elevator car enclosures, hoistway entrances and signal equipment.
3. Existing Jacks. (Alternate bid)
4. Operation and control systems.
5. Accessibility provisions for physically disabled persons.
6. Existing Equipment, machine, controls, systems and devices as required for safely operating the specified elevator at its rated speed and capacity.
7. Materials and accessories as required to complete the elevator installation.

B. Related Sections:

Division 15 Sections:

1. Heating and ventilating hoistway and machine room.

Division 16 Sections:

1. Providing electrical service to elevators, including fused disconnect switches.
2. Heat and smoke sensing devices.

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3. Convenience outlets and illumination in machine room, hoistway and pit.

1.2 SUBMITTALS

Prior to commencement of fabrication, provide operating fixture details, hoistway layout, drive machine, controllers, car sling, counterweight, frame, cab and finish samples for selection. It is the contractor's responsibility to examine, measure and otherwise determine that work can be performed as specified. Any discrepancies or ambiguities found in the specifications shall be reported to the City immediately for resolution.

A. Product data:

1. Submit product data for all major components replaced including following:
 - a. Elevator car enclosure changes.
 - b. Hoistway doors.
 - c. Hydraulic Jack
 - d. Operating systems.
 - e. Control systems.
 - f. Signal systems.
 - g. Door Operation systems.

B. Shop drawings:

1. Show equipment arrangement in the machine room, pit and hoistway to confirm code compliance for clearances, heat loads, etc.
2. Indicate elevator system capacities, sizes, performances, safety features, finishes and other pertinent information.
3. Indicate electrical power requirements and branch circuit protection device recommendations

C. Color selection:

1. Submit color charts of exposed finishes and materials for color selection.

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2. Submit samples of exposed finishes and materials selected for the elevator system materials and components.

D. Certificates:

1. Inspection and acceptance certificates of elevator system installation.

E. Operation and Maintenance data.

1. Three [3] sets of operation, maintenance instructions and wiring diagrams. One set shall be laminated and placed on Job Site. The other sets shall be delivered to The City of Norfolk hereafter referred to as the “Owner”.
2. Three [3] sets of parts list, with recommended parts inventory. One set shall be laminated and placed on Job Site. The other sets shall be delivered to the Owner.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. An approved manufacturer regularly engaged in manufacturing, installing and servicing elevators of the type required for this project.
2. The manufacturer of the machine, controller, signal fixtures, door operators, cab, entrances, and all other major parts of the elevator operating equipment.
3. The major parts of the elevator equipment shall be manufactured in the United States, and not be an assembled system.
4. The manufacturer shall have a documented, on-going quality assurance program.

B. Installer Qualifications:

1. The manufacturer or an authorized agent of the manufacturer with not less than five years of satisfactory experience installing elevators equal in character and performance to the project elevators.

C. Regulatory Requirements:

1. ASME A17.1b-2009 Safety Code for Elevators and Escalators.

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2. International Building Code.
3. Commonwealth of Virginia USBC
4. NFPA 70 National Electrical Code.
5. NFPA 80 Fire Doors and Windows.
6. Americans with Disabilities Act - Accessibility Guidelines (ADAAG).

D. Fire-rated entrance assemblies:

1. Opening protective assemblies including doors, hardware, and operation shall comply with ASTM E2074, CAN4-S104 (ULC-S104), UL10 (b), and NFPA Standard 80.
2. Provide entrance assembly units bearing Class B or 1 1/2 hour label by a Nationally Recognized Testing Laboratory

E. Inspection and testing:

1. Elevator Installer shall obtain from The Authority Having Jurisdiction and pay for all required inspections, tests, permits and fees for elevator installation.
2. Arrange for inspections and make required tests.
3. Deliver to the Building Owner upon completion and acceptance of elevator work.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver elevator materials, components and equipment in manufacturer's protective packaging.
- B. Store materials in a dry protected area provided by others.
- C. Protect and handle materials in accordance with manufacturer's recommendations to prevent damage, soiling, or deterioration.

1.5 PROJECT CONDITIONS

BOUSH STREET GARAGE ELEVATOR MODS

A. Prohibited Use:

1. Elevator shall not be used as a construction hoist during the construction period before Substantial Completion.

B. Painting:

1. Except as otherwise specified, paint all metal work provided by the elevator manufacturer and installer.
2. Provide all ferrous metals installed in the hoistway shop primed with rust inhibitive primer.
3. Clean and repaint hoistway and pit equipment such as but not limited to: rails except for machined surfaces, car stiles, crosshead, bolster plate and channel, door headers and dustcovers. Hoistway walls, ceiling and pit to be repainted with similar color or as selected by owner.

1.6 WARRANTY

- A. Submit elevator manufacturer's standard written warranty agreeing to repair, restore or replace defects in elevator work materials and workmanship not due to ordinary wear and tear or improper use or care for 12 months from date of Total Completion.

1.7 MAINTENANCE

- A. Furnish maintenance and call back service for a period of 12 months for the elevator from date of Total Completion.
- B. Service shall consist of periodic examination of the equipment, adjustment, lubrication, cleaning, supplies and parts to keep the elevators in proper operation.
- C. Maintenance work, including emergency call back repair service, shall be performed by trained employees of the elevator contractor during regular working hours.
- D. Submit parts catalog and show evidence of local parts inventory with complete list of recommended spare parts.
- E. Parts shall be produced by manufacturer of original equipment.

BOUSH STREET GARAGE ELEVATOR MODS

- F. Manufacturer shall have a service office and full time service personnel within a 50 mile radius of the project site.

1.8 REMOVAL OF OLD EQUIPMENT

- A. Furnish all required labor and tooling to remove and dispose of the affected elevator parts and equipment, less hoistway door frames and sills. Owner reserves the right to reclaim used parts.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

NO PROPRIETARY SOFTWARE, HARDWARE OR EQUIPMENT SHALL BE USED ON THIS PROJECT.

Elevator controller and system components installed, supplied, and/or provided shall be manufacturer's non-proprietary equipment whereas any elevator company shall be allowed to purchase, install, and service the equipment.

Equipment and component systems shall not employ any proprietary designs that could hamper and/or otherwise prohibit subsequent maintenance, repairs or adjustments by qualified contractors.

Controller Manufacturers shall provide replacement parts on the open market to all maintenance/service providers for equipment and component systems for as long as said parts are available to ensure control systems remain maintainable regardless of who may be selected for future service.

Engineering & Technical support will be provided by the original equipment manufacturer to any maintaining contractor so designated by the building owner or Management Company

The elevator controller shall be provided together with all available diagnostic tool functionality, either onboard or in a separate device/interface for the sole purpose of periodic maintenance, adjustment and troubleshooting the system while providing unrestricted access to all parameters, levels of adjustment, and flags necessary for maintenance, repair or adjustment of equipment.

Contractor shall deliver to the Owner, printed or on-line "adjuster-level" help instructions for the proper use of any tool that may be necessary to perform diagnostic evaluations, adjustments and/or programmable software changes on any unit of microprocessor-based elevator control equipment installed by the Contractor.

BOUSH STREET GARAGE ELEVATOR MODS

Accompanying these instructions shall be any and all access codes, passwords, nomenclature or other information that is necessary to interface the tool with the microprocessor control equipment.

A. Manufacturers:

THESE MANUFACTURERS MAY BE USED OR EQUAL TO:

1. Fixtures – PTL Equipment Manufacturing Company Inc.
2. Machine – Canton Elevator, Inc.
3. Jack and Piston – Canton Elevator, Inc.
4. Car Sling and Platform - Canton Elevator, Inc
5. Rails, Brackets and Spring Buffers - Canton Elevator, Inc
6. Car Roller Guides – Elevator Safety Company (ELSCO).
7. Door Operators and all Related Equipment – G.A.L. Manufacturing Corporation.
8. Hatch Door Frames and all Doors – Tyler Elevator Products
9. Operation Control Systems, Selector and Limit Switches –MCE, Virginia Controls.
10. Control valve- Maxton Inc.
11. Cab interior- Snap Cab

2.2 MATERIALS, GENERAL

Colors, patterns, and finishes:

A. Steel:

1. Shapes and bars: ASTM A 36.
2. Sheet: ASTM A 366, cold-rolled steel sheet, commercial quality, Class 1, matte finish, stretcher leveled.

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3. Finish: Factory-applied baked enamel.
- B. Stainless steel:
 1. Shapes and bars: ASTM A 276, Type 300 (18-8).
 2. Tubing: ASTM A 269, Type 300 (18-8).
- C. Bronze:
 1. Drawn pipe: ASTM B 43, alloy UNS C23000, red brass.
 2. Sheet: ASTM B 36, alloy UNS C28000, muntz metal.
 3. Extrusions: ASTM B 455, alloy UNS C38500, architectural bronze.
- D. Aluminum:
 1. Sheet and plate: ASTM B 209, alloy 6063-T52.
 2. Extrusions: ASTM B 221, alloy 6063-T52.
- E. Nickel silver:
 1. ASTM B 151 extrusions, alloy UNS No. C74500, polished finish.
- F. Plastic laminate:
 1. Decorative high-pressure type, complying with NEMA LD3, Type GP-50 General Purpose Grade, nominal 0.050" thickness.
- G. Wood:
 1. Fire rated
- H. Glass:
 1. Clear laminated safety glass, complying with ANSI Z97.1, nominal 9/16" thickness.
- I. Rubber Matting:

BOUSH STREET GARAGE ELEVATOR MODS

1. Rubber matting conforming to ASME A17.1 Part 2.14. Design to be raised “coin” type, in single piece construction.

2.3 HOISTWAY EQUIPMENT

A. Platforms:

1. RETAIN EXISTING. Clean and repaint interior and exterior with rust preventative paint.

B. Slings:

1. RETAIN EXISTING. Clean and repaint accessible surfaces with rust preventative paint.

C. Guide Rails:

1. RETAIN EXISTING – Clean and paint.

D. Guide Shoes:

1. New Roller Guides shall be mounted on top and bottom of the car.

E. Buffers:

1. RETAIN EXISTING. Clean and repaint buffer channels, stands and all pit equipment with rust preventative paint.

F. Jacks:

PROVIDE ALTERNATE PRICING FOR THE REPLACEMENT OF JACKS

1. Jack units shall be of sufficient size to lift the gross load the height specified for proper operation.
2. Factory test jack to insure adequate strength and freedom from leakage.
3. Jack unit will be constructed and installed in compliance with A17.1b-2009 with provisions for monitoring hydraulic cylinder leakage.
4. Weld brackets to the jack cylinder for supporting the elevator on existing pit channels.

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5. Jack exterior shall be painted in its entirety with rust proof paint including head, brackets and exposed surfaces.
 6. If jacks are retained: repack, clean and paint exposed surfaces.
- G. Terminal Limits:
1. Install new terminal limits to operate per code.
- H. Automatic Self-Leveling:
1. Provide the elevator car with a self-leveling feature to automatically bring the car to the floor landings and correct for over-travel or under-travel.
 2. Self-leveling shall, within its zone, be automatic and independent of the operating device.
 3. The car shall be maintained approximately level within +1/4" of the landing irrespective of its load or direction of travel.
 4. Automatic self leveling shall be accomplished by an encoder device or microprocessor device mounted on the elevator car.
- I. Failure Protection:
1. Design electrical control circuit so if a malfunction occurs, due to motor starter failure, oil becoming low in the system, or the car failing to reach a landing in the up direction within a pre-determined time, the elevator car will automatically descend to the lowest terminal landing.
 2. The doors will automatically open when the car reaches that landing to allow passengers to depart.
 3. The doors will then automatically close and all control buttons, except the "door open" button in the car station, shall be made inoperative.
- J. Wiring, Electrical Conduit, Hydraulic Piping:
1. Provide all new hoistway wiring in accordance with the National Electrical Code. Existing conduits may be used provided they meet all NEC requirements.

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2. All underground piping and fittings shall be replaced and installed in code compliant method.
3. Provide additional shut off valve to comply with current code. Install a minimum of 2 isolation couplings in jack line piping.

K. Emergency Terminal Stopping Device:

1. Provide new emergency terminal stopping devices and shall operate per code.
2. The emergency terminal stopping device shall operate independently of the normal terminal stopping device if it fails to slow down the car at the terminal as intended.
3. Stopping devices shall not be prevented from functioning by a single short circuit caused by a combination of grounds or by other conditions.

L. Pit Ladder

1. Replace pit ladders with code compliant units.

2.4 MACHINE ROOM

A. Power Unit (Oil Pumping and Control Mechanism):

1. All new self-contained unit consisting of the following new components:
 - a. Oil reservoir with tank cover and controller compartment with cover.
 - b. Positive displacement type pump specifically manufactured for oil hydraulic elevator service and designed for steady discharge with minimum pulsation to give smooth and quiet operation. Output shall not vary more than 10% throughout load range. Drive may be submerged or dry mount depending on manufacturer's recommendations.
 - c. Electric motor appropriately sized for speed and load of elevator. Contractor shall coordinate with electrical subcontractor and provide electrical connection as directed by the project Engineer and Owner.

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- d. Single unit Oil Control Valve including high pressure relief valve, check valve, automatic unloading valve, up and down run and level valves.
- e. Provide vibration pads under the power unit assembly to isolate the unit from the building structure.
- f. Provide oil hydraulic silencer (muffler) to reduce vibrations from oil flow.
- g. Provide sound insulation for dry mount units.
- h. Provide new proper grade and viscosity oil as recommended by manufacturer.

B. Power Controller:

- 1. The elevator control system shall be microprocessor based. Control of the elevator shall be automatic in operation by means of push buttons in the car and hall.
- 2. Momentary pressing of one or more buttons shall dispatch the car to the designated landings in a selective collective manner.
- 3. The elevator contractor shall provide circuitry so after normal power failure, battery powered emergency power system shall lower the car to its lowest level, open the door and remove itself from service until normal power is restored.
- 4. Control system shall be protected by an enclosure from environmental extremes and excessive vibrations.
- 5. Provide solid state "SOFT START" motor starter.

2.5 HOISTWAY ENTRANCES

A. Doors and Frames:

- 1. Re-use complete hollow metal type hoistway entrances and sills at each hoistway opening.

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2. Provide and install all new doors panels, hangers, hanger supports, tracks, rollers, gibs, fire tabs and necessary hardware. Replace any missing dust covers and required hoistway fascia.
3. Doors construction to be Stainless steel: ASTM A 167, Type 300 stainless steel panels with No. 4 satin finish.
4. Provide custom made and installed stainless steel wraps over existing hoistway door frames to match doors.
5. Provide new code compliant interlocks and release rollers at all hoistway doors matching door operator.
6. Provide ADA required floor identification pads in door jambs.

2.6 CAR ENCLOSURE

A. INTERIOR

1. Retain existing cab structure and provide new interior panel system with handrails in appropriate areas. (Snap Cab or equal).
2. Remove existing flooring and repair platform to solid and level condition. Install rubber matting as previously described.
3. Retain canopy and ceiling. Provide new translucent panels and new code compliant fluorescent light fixtures.
4. Refinish Cab Columns, Front, and Transom to like new condition.
5. Replace car doors with Stainless steel ASTM A 167, Type 300 stainless steel panels, No. 4 satin finish.

B. CAR TOP

1. Replace car ventilation fan with 2 speed fan mounted on the car top with battery back-up.
2. Provide new code compliant Car Top Inspection on car top.

2.7 DOOR OPERATION

A. Door Operation

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1. Provide a VVVF heavy duty operator designed to operate the car and hoistway doors simultaneously.
2. Doors shall automatically open when the car arrives at the landing and automatically close after an adjustable time interval or when the car is dispatched to another landing. Direct drive geared operators, AC controlled units with oil checks or other deviations are not acceptable.
3. Nudging Operation, doors shall remain open as long as the electronic detector senses the presence of a passenger or object in the door opening.

B. Door Protection Devices

1. Provide a door protection system using microprocessor controlled infrared beam water resistant system with minimum of 40 beams.
2. The beams shall project across the car opening detecting the presence of a passenger or object. If door movement is obstructed, the doors shall reopen without delay.

2.8 SIGNAL AND CONTROL FIXTURES

Remove existing operating fixtures and signals and replace as follows:

Provide operating fixtures for car and hall stations, fixtures should be located and designed to comply with NEIL, ASME A17.1; UFAS; and ANSI A117.1. Cover plate finish for car interior operating fixtures shall meet code and are to be #4 brushed stainless steel finish. All components are shall be vandal resistant design. All indicator lights shall be "led" type. Replacement units to cover original installations or repair, patch and repaint as necessary.

A. Car operating panel: Provide new car operating panel and auxiliary panels as necessary with all devices to meet current code.

1. Car call push buttons and call registered lights.
2. Fire Service operating panel.
3. Locate push buttons and other switches as may be required by code. Locate fan, light, independent service, access inspection and other auxiliary switches to provide the operation specified herein in the upper portion of the service panel. Locate to conform to ADA Requirements.

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4. All warning signs, capacity, fire service instructions and required graphics including no smoking symbol, shall be engraved in the new car station. All engraving should be paint filled. Floor call buttons are to read 1, 2, 3, 4, 5 and 6. Floor 1 is main floor and floor 2 is alternate floor.
 5. Provide integral direction arrows and Position Indicator in main car operating panel.
 6. Provide code compliant two-way communication system with self-dialing capabilities. Speaker and actuating button to be an integral part of the car operating push-button panels.
 7. Provide emergency lights, bells and other announcements as needed to comply with ADA-requirements.
 8. Provide emergency communication device to each car for per ASME A17.1b-2009, section 2.27.31.1.4 for emergency personnel responding onsite.
- B. Hall Stations: Provide new hall operating fixtures with all devices to meet current code.
1. Provide new code compliant flush mounted fixtures at all floors.
 2. Call registered buttons and lights: Provide an integrally mounted light in all landing push buttons. Fire service required equipment at main floor.
 3. “In Case of Fire” pictograph engraved and paint filled.
- C. Hall lanterns:
1. Provide directional illuminated arrows showing direction of travel of elevator with integral position indicators. Remove existing and replace with new.
 - a. Provide bell or chime audible to notify waiting passenger(s) the direction of travel. One ring for up and two rings for down direction.
- D. Access controls:
1. Provide new access control panels to replace existing.

BOUSH STREET GARAGE ELEVATOR MODS

2.9 SYSTEM DESCRIPTION

- A. NUMBER OF CARS: 1 simplex car
- B. Capacity: 2,500lbs.
- C. Landings: 6 front, 0 rear.
- D. Speed: 125 fpm.
- E. Operation and Motion Control: Microprocessor control. Selective collective/automatic operation. Soft start motor starting.
- F. Power Supply: 480vac/3ph/60HZ (to be confirmed before ordering equipment)
- G. Door Entrances: 42" Door Entrances (TO BE RETAINED) (wrapped with stainless steel # 4 finish)
- H. Hoistway doors: Replace with new stainless steel #4 finish
- I. Power units: hydraulic.
- J. Rails and brackets: Retain existing.
- K. Buffers: retain existing.
- L. Signal and control fixtures: replace all. Patch or repair original surfaces as necessary.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Before starting elevator installation, inspect hoistway, hoistway openings, pits and machine rooms, as constructed, verify all critical dimensions, and examine supporting structures and all other conditions under which elevator work is to be installed.
- B. Do not proceed with elevator installation until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

BOUSH STREET GARAGE ELEVATOR MODS

- C. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.

3.2 INSTALLATION

- A. Install elevator systems components in accordance with all applicable codes and regulations.
- B. Work shall be performed by competent elevator installation personnel in accordance with ASME A17.1a-2009, manufacturer's installation instructions and approved shop drawings.
- C. Comply with the National Electrical Code for electrical work required during installation.
- D. Perform work with competent, licensed mechanics under the direct control and supervision of the elevator contractors experienced foreman.
- E. Supply in sufficient time for installation by other trades, inserts, anchors, bearing plates, brackets, supports, and bracing including all setting templates and diagrams for placement.
- F. Set jack units-cylinder assembly plumb, centered accurately and shimmed to proper elevation, using centering lugs to prevent dislocation during operation.
- G. Welded construction:
 - 1. Provide welded connections for installation of elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualification of welding operators.
- H. Coordination:
 - 1. Coordinate elevator work with the work of other trades, for proper time and sequence to avoid construction delays. Use benchmarks, lines, and levels designated by the Contractor, to ensure dimensional coordination of the work.
- I. Install machinery, guides, controls, car and all equipment and accessories to provide a quiet smoothly operating installation, free from side sway, oscillation or vibration.

BOUSH STREET GARAGE ELEVATOR MODS

J. Sound isolation:

1. Mount rotating and vibrating elevator equipment and components on vibration-absorption mounts, designed to effectively prevent the transmission of vibrations to the structure, and eliminate sources of structure-borne noise from the elevator system.

K. Lubricate operating parts of system, as recommended by manufacturer.

3.3 FIELD QUALITY CONTROL

A. Acceptance testing:

1. Upon completion of the elevator installation and before permitting use of elevator, perform acceptance tests as required and recommended by Code and governing regulations or agencies. Perform other tests, if any, as required by governing regulations or agencies.
2. Advise Owner, Contractor, Engineer, and governing authorities in advance of dates and times tests are to be performed on the elevator with sufficient time for all concerned parties to schedule to be present.
3. Conduct endurance test with full load for 1 hour, running car continuously from floor to floor, up and down.

3.4 ADJUSTING

- ### A. Make necessary adjustments of operating devices and equipment to ensure elevator operates smoothly and accurately.

3.5 CLEANING

- ### A. Before final acceptance, remove protection from finished surfaces and clean and polish surfaces in accordance with manufacturer's recommendations for type of material and finish provided.
- ### B. At completion of elevator work, remove tools, equipment, and surplus materials from site. Clean equipment room and hoistway. Remove trash and debris.

3.6 PROTECTION

BOUSH STREET GARAGE ELEVATOR MODS

- A. At time of Substantial Completion of elevator work, or portion thereof, provide suitable protective coverings, barriers, devices, signs, or other such methods or procedures to protect elevator work from damage or deterioration.
- B. Maintain protective measures throughout remainder of construction period.

3.7 DEMONSTRATION

- A. Instruct Owner's personnel in proper use, operations, and daily maintenance of elevator.
- B. Review emergency provisions, including emergency access and procedures to be followed at time of failure in operation and other building emergencies.
- C. Train Owner's personnel in normal procedures to be followed in checking for sources of operational failures or malfunctions.
- D. Make a final check of elevator operation, with Owner's personnel present, immediately before date of substantial completion.
- E. Determine that control systems and operating devices are functioning properly.

END OF SECTION

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BOUSH STREET GARAGE ELEVATOR MODS

SECTION 15000

MECHANICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The General Conditions, Supplementary General Conditions, and Special Conditions of this Contract form a part of this Division of Specification.
- B. This section forms a part of all sections under Division 15 Mechanical.
- C. Requirements herein augment or clarify articles specified under aforementioned General and Special Conditions.

1.2 SITE EXAMINATION

- A. Before submitting bid, Contractor shall examine the premises and satisfy himself as to the existing conditions under which he will be obliged to operate or what will affect the work under this Contract. Contractor shall report to the Engineer any condition which might prevent installation of equipment or systems in the manner intended. No allowance will be made subsequently in this connection in behalf of this Contractor for error or negligence on his part.

1.3 CODES AND STANDARDS

- A. Latest effective publications of applicable codes and ordinances of local governing agencies and of the following standards, codes, etc., as they apply, form part of these specifications as if were written fully herein. The publication date is the publication in effect as of the bid date, except when a specific publication date is listed. These will be referred to throughout in abbreviated form.
 - 1. Virginia Uniform Statewide Building Code (VUSBC)
 - 2. National Fire Protection Association (NFPA)
 - 3. Factory Mutual Engineering Association (FM)

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4. Underwriters' Laboratories, Inc. (UL)
5. Occupational Safety and Health Administration (OSHA)
6. American Society of Mechanical Engineers (ASME)
7. American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. (ASHRAE)
8. Air Conditioning and Refrigeration Institute (ARI)
9. American National Standards Institute (ANSI)
10. American Society for Testing and Materials (ASTM)
11. American Welding Society (AWS)
12. Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS)
13. Air Movement and Control Association, Inc. (AMCA)
14. Sheet Metal and Air Conditioning Contractors' National Association, Inc. (SMACNA)
15. Electrical Testing Laboratories (ETL)
16. Americans with Disabilities Act (ADA)
17. International Mechanical Code
18. International Plumbing Code

1.4 PERMITS, INSPECTIONS, FEES AND NOTICES

- A. Unless modified by the General Conditions and Supplementary Conditions, work is to be executed and inspected in accordance with governing codes, laws, ordinances, rules, and regulations applicable to particular class of work, and fees in connection therewith are to be paid by this Contractor.

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- B. This Contractor is to arrange for project inspection, paying charges pertaining hereto. He shall give the proper authority requisite notice relating to work under his charge, shall afford Architect/Engineer and authorized inspectors every facility for inspection and shall be responsible for violations of law. Upon completion of work, he shall have work inspected, if required, obtaining certificate of inspection and approval from inspecting agency, and shall deliver such certificate to Engineer.

1.5 SCOPE OF WORK

- A. Work required for Division 15 Mechanical shall include labor, materials, equipment, appurtenances, and services to provide first class working systems, tested and ready for operation. Installation shall conform to the drawings and specifications, incorporating the best standards of workmanship. Materials shall be new and of good quality, and labor shall be performed by skilled mechanics under the direction of a competent superintendent.

1.6 DRAWINGS AND SPECIFICATIONS

- A. The implied and stated intent of the drawings and specifications is to establish minimum acceptable quality standards for materials, equipment and workmanship, and to provide operable mechanical systems complete in every respect.
- B. Apparatus, appliance, material or work not shown on drawings but mentioned in the specifications, or vice versa, or incidental accessories necessary to make the work complete and ready for operation, even if not particularly specified, shall be provided by the Contractor without additional expense to the Owner.
- C. Contractor shall examine and consult drawings and specifications of other trades to better familiarize himself with the character of construction and include in his bid work of his trade shown or reasonably inferred. He shall consult the drawings and specifications of other trades in installing his work.
- D. This Contractor shall be thoroughly familiar with specified products relating to his work and shall submit written objections prior to bid if he objects to the proposed use of any product.
- E. Should structural difficulties prevent the installation of piping, ductwork, fixtures, or equipment at the points shown on the drawings, necessary deviations therefrom, as determined by the Engineer, will be permitted and shall be made

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without additional cost. This Contractor shall work with other Contractors and arrange his work so as not to interfere with the work of other Contractors.

- F. Drawings are diagrammatic, intending to show general arrangement and location of system components, with no attempt made to show every ell, tee, fitting, etc. Due to the small scale of the drawings, and to unforeseen job conditions, required offsets and fittings may not be shown but shall be provided at no change in Contract price. Ducts and pipes shall be run in spaces indicated as job conditions warrant, arranged for most convenient access for servicing, with due consideration given to swing joints and to other Contractor's work. If departures from the contract drawings are deemed necessary, Contractor shall submit details of such departures and the reasons therefor as soon as practicable after award of contract to the Engineer for approval. Make no such departures without prior written approval of the Engineer.
- G. Contractor shall maintain on site a current set of drawings and specifications.
- H. In case of conflicting information on the drawings and/or in the specifications, the proper interpretation shall be made by the Engineer.
- I. Disagreements occurring between trades covering various phases of the work shall be referred to General Contractor for decision.
- J. Changes and additions to scope of the work under this contract shall be submitted to the Engineer and his written approval obtained before proceeding with the changed work.

1.7 WORDING

- A. Specifications are of simplified form and include incomplete sentences. Omission of words or phrases such as "the Contractor shall", "shall be", "provide", "furnish", "a", "an", "the" is intentional. Omitted words or phrases shall be supplied by inference.

1.8 DEFINITIONS

- A. "Provide": To furnish, erect, install, and connect up complete and ready for regular operation, particular work referred to, unless specifically indicated or specified otherwise.

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- B. "Work": Labor and materials, or both, including apparatus, controls, accessories, and other items necessary or required to provide a complete installation.
- C. "Piping": Pipe and fittings, flanges, valves, controls, hangers, traps, drains, insulation, and items necessary or required in connection with or relating to such piping to provide a complete installation.
- D. "Concealed": Embedded in masonry or other construction, installed behind wall furring, within double partitions or above hung ceilings, in trenches, tunnels, or crawl spaces.
- E. "Exposed": Not installed underground or "concealed" as defined above.
- F. "Indicated" or "Shown": As indicated or shown on drawings.
- G. "Noted": As indicated on drawings and/or specified.
- H. "Contract" or "this Contract" shall consist of documents listed in the Contractor Agreement and Supplemental Agreements, data or drawings which could reasonably be required to complete the work. This shall be considered as one instrument and referred to collectively as the "Contract Documents".
- I. Whenever the words "as shown" or "indicated" are used in the description of any part of the work, it shall be understood to mean as shown on the contract drawings, unless another meaning is plainly indicated or noted.

1.9 SUBMITTALS

- A. Products List:
 - 1. Within 15 days after Contract Award Date, submit to Engineer a complete list of major products proposed to be used, with the name, address, and phone number of the manufacturer, manufacturer's representative, and the installing subcontractor. List shall include the following:
 - a. Ductless split system heat pump
- B. Submit Shop Drawings, Product Data and Samples within thirty (30) days of award of contract and in accordance with the General Conditions and Supplementary Conditions. All interdependent equipment, i.e., chillers, boilers, pumps and associated hydronic equipment, shall be submitted simultaneously.

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Submittals are required for items provided under this specification. Review of submittals by the Engineer and associated action taken by the Engineer does not relieve the contractor of requirements set forth by the contract documents.

- C. Submittals shall clearly indicate all features, options, capacities, etc. to show compliance with the drawings and specifications.
- D. The Contractor Shall:
 - 1. Coordinate submittal with requirements of the work and of the Contract Documents.
 - 2. Notify the Engineer in writing, at time of submission, of deviations in the submittals from requirements of the Contract Documents.
 - 3. Begin no fabrication or work which requires submittals until return of submittals with Engineer approval.
 - 4. Make submittals promptly and in such sequence as to cause no delay in the work or in the work of other contractors.
- E. Prepare Product Data as Follows:
 - 1. Clearly mark each copy to identify pertinent products or models.
 - 2. Show performance characteristics and capacities.
 - 3. Show dimensions and clearances required.
 - 4. Show wiring diagrams, piping diagrams and controls.
- F. Prepare manufacturer's standard schematic drawings and diagrams as follows:
 - 1. Modify drawings and diagrams to delete information which is not applicable to the work.
 - 2. Supplement standard information to provide information specifically applicable to the work.
- G. Prepare office samples of sufficient size and quantity to clearly illustrate:

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1. Functional characteristics of the product, with integrally related parts and attachment devices.
2. Full range of color, texture and pattern.

H. Submittals shall contain:

1. The date of submission and of any previous submissions.
2. The project title and number.
3. Contract or project identification.
4. The names of:
 - a. Contractor.
 - b. Supplier.
 - c. Manufacturer.
5. Identification of the product, and specification section.
6. Field dimensions, clearly identified as such.
7. Relation to adjacent or critical features or materials.
8. Applicable standards.
9. Identification of deviations from Contract Documents.
10. Identification of non-complying features and reason for the non-compliance. The reason shall be specific in nature.
11. Identification of revisions on resubmittals.
12. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and of Contract Documents.

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- I. Submittals of Mechanical and Plumbing Equipment requiring maintenance shall be accompanied by three (3) sets of the manufacturers' standard Operating and Maintenance Instructions and Parts Lists. A bound manual with an index and identification tabs shall be prepared for each set. These are to be retained by Contractor, until completion of job, at which time they will be assembled and turned over to the Engineer.

1.10 SUBSTITUTIONS AND PRODUCT OPTIONS

A. Contractor's Options:

1. For Products specified only by reference standard, select any product meeting that standard.
2. For products specified by naming several products or manufacturers, select any one of the products or manufacturers named, which complies with the specifications.
3. For products specified by naming one or more products or manufacturers and "or equal", or where a particular product is indicated as the basis of design, Contractor must submit a request prior to bid as for substitutions for any product or manufacturer not specifically named.

B. Substitutions:

1. For a period up to 15 days prior to bid, the Engineer will consider written requests from Contractor for substitution of products.
2. Submit a separate request for each product, supported with complete data, with drawings and samples as appropriate, including:
 - a. Comparison of the qualities of the proposed substitution with that specified.
 - b. Changes required in other elements of the work because of the substitution.
 - c. Effect on the construction schedule.
 - d. Cost data comparing the proposed substitution with the product specified.

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- e. Availability of maintenance service, and source of replacement materials.
- 3. Engineer shall be the judge of the acceptability of the proposed substitution.
- C. Contractor's Representation:
 - 1. A request for a substitution constitutes a representation that Contractor:
 - a. Has investigated the proposed product and determined that it is equivalent to or superior in all respects to that specified.
 - b. Will provide the same warranties or bonds for the substitution as for the product specified.
 - c. Will coordinate the installation of an accepted substitution into the work, and make such other changes as may be required to make the work complete.
 - d. Waives claims for additional costs, under his responsibility, which may subsequently become apparent.
- D. Engineer will review requests for substitutions with reasonable promptness, and notify Contractor, in writing, of the decision to accept or reject the requested substitution.

1.11 MANUFACTURER'S INSTRUCTIONS

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to Engineer.
 - 1. Maintain one set of complete instructions at the job site during installation and until completion.
- B. Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions and in conformity with specified requirements.

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1. Perform work in accordance with manufacturer's instructions. Do not omit any preparatory steps or installation procedure unless specifically modified or exempted by Contract Documents.
2. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Architect/Engineer for further instructions.
3. Do not proceed with work without clear instructions.

1.12 ADDITIONAL REQUIREMENTS

- A. All equipment and appliances that comprise part of the building mechanical systems regulated by the International Mechanical Code shall be listed and labeled in accordance with the International Mechanical Code.
- B. All listed and labeled equipment shall be installed in accordance with its listing label, manufacturer's installation instructions, and the International Mechanical Code.
- C. Manufacturer's installation instructions shall be available at the job site for use and inspection.

PART 2 - PRODUCTS

2.1 MANUFACTURING STANDARDS

- A. Materials shall be new and designed and/or constructed for their intended use and application. Defective equipment or equipment damaged in the course of installation or test shall be replaced or repaired in a manner meeting the approval of the Engineer. Materials to be furnished under this specification shall be the standard products of manufacturers regularly engaged in the production of such equipment and shall be the manufacturer's latest standard design. All items of the same type and rating shall be identical.

2.2 ELECTRICAL REQUIREMENTS

- A. Except as otherwise detailed or specified, all interconnecting power wiring required to operate electrical devices and equipment furnished in this Division will be provided under Division 16 Electrical.

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- B. All controllers, motors, starters, and individual component fusible protection for all accessory equipment in accordance with NEC, etc. shall be as specified under Division 16 Electrical of the specifications and furnished with equipment under this division. Starters and controllers that are not mounted on the equipment shall be turned over to the Electrical Contractor for installation.
- C. Disconnect switches shall be provided under Division 16 Electrical unless specified in Division 15 Mechanical as integral with equipment.
- D. Requirements for electrical apparatus, devices, controls, etc. furnished in this Division shall conform to Division 16 Electrical.
- E. Control and interlock, wiring and conduit required for electrical devices and equipment furnished in this Division will be provided under this division.

2.3 MOTORS AND MOTOR CONTROLS

- A. All motors furnished as a part of the work of this Division, unless otherwise specified, shall be furnished by the manufacturer of the equipment served and shall be mounted and aligned so as to run free and true.
- B. All motors shall be provided with a terminal box of adequate size to accommodate the required conduit and wiring. Wire nuts and lugs will be provided under Division 16 Electrical.

PART 3 - EXECUTION

3.1 SCHEDULE OF WORK

- A. The schedule of the mechanical work shall be arranged to suit the progress of work by the other trades and shall in no way retard progress of construction of the building.
- B. Work under this Division shall proceed in advance of the work of others whenever possible, eliminating cutting and patching. When such procedure is impossible, cutting and patching shall be done in an approved manner. Cutting shall not endanger structural function of the building. Patching shall match existing work. Actual work of cutting and patching of existing surfaces shall be performed by the subcontractor who originally prepared these surfaces, e.g., cutting and patching of masonry wall will be performed by the masonry subcontractor. Cutting shall be carefully done and damage to building, piping,

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wiring or equipment as a result of cutting shall be repaired by skilled mechanics of trade involved. Each Contractor shall furnish sketches showing locations and sizes of all openings, chases, etc. required for installation of his work.

- C. Contractor shall furnish and locate sleeves and inserts required before floors and walls are built. Contractor shall coordinate all drilling required for installation of his hangers.
- D. Exposed piping and ductwork shall be completely installed and ready for painting by General Contractor. Any incorrect and added work installed by Mechanical Contractor after the General Contractor has painted the areas shall be painted at no additional cost to the Owner.
- E. Contractor must cooperate completely with contractors providing equipment under other divisions of the specifications. This is particularly important in accordance with Division 16 Electrical.
- F. Space Priority:
 - 1. Ensure equitable use of available space for materials and equipment installed above ceilings. Allocate space in the order of priority as listed below. Items are listed in the order of priority, with items of equal importance listed under a single priority number.
 - a. Gravity flow piping systems.
 - b. Vent piping systems.
 - c. Ceiling recessed lighting fixtures.
 - d. Concealed air terminal units, fans.
 - e. Air duct systems.
 - f. Sprinkler systems piping.
 - g. Forced flow piping systems.
 - h. Electrical conduit, wiring, control wiring.

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2. Order of priority does not dictate installation sequence. Installation sequence shall be as mutually agreed by all affected trades.
3. Change in order of priority is permissible by mutual agreement of all affected trades.
4. The work of a particular trade shall not infringe upon the allocated space of another trade without permission of the Contractor for the affected trade.
5. The work of a particular trade shall not obstruct access for installation, operation and maintenance of the work, materials and equipment of another trade.

G. Installation

1. Inaccessible Equipment:
 - a. Where the end user determines that the Contractor has installed equipment not conveniently accessible for operation and maintenance, equipment shall be removed and reinstalled or remedial action performed as directed at no additional cost to the end user.
 - b. The term "conveniently accessible" is defined as capable of being reached without the use of ladders 2'-0" greater than the ceiling height, or without climbing or crawling under or over obstacles such as motors, fans, pumps, belt guards, transformers, high voltage lines, piping, and ductwork. Equipment above ceilings shall be within 12" of top of ceiling.

3.2 BUILDING OPENINGS FOR ADMISSION OF EQUIPMENT

- A. Contractor shall ascertain from his examination of the architectural and structural drawings whether any special temporary openings in the building for the admission of apparatus furnished under this Contract will be necessary, and he shall notify the Engineer accordingly. Failure to give this notification in sufficient time for Engineer to arrange for same during construction shall not incur any additional cost to the Owner.

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3.3 WORK IN EXISTING BUILDINGS

- A. Work in existing buildings must be scheduled during times when the buildings are occupied. Systems serving the existing building[s] must be kept operative at all times. Temporary system shutdown shall be approved by the Owner prior to actual shutdown.
- B. Fixtures, equipment, piping, etc. that are removed and not indicated "to be reused" are to become property of the Contractor and shall be removed from the building site.
- C. Demolition drawings indicate approximate location, size and quantity of piping: Minor variations in location of piping exposed by removal of walls or openings in walls and required to maintain an operating system shall be relocated as directed at no additional expense to the Owner. Piping not required to maintain an operating system shall be removed. The Mechanical Contractor shall be responsible for the piping work involved in cutting required for all trades.
- D. Cutting and patching will be performed by the General Contractor. Contractor shall furnish sketches showing locations, and sizes of openings, chases, etc. required for installation of his work.

3.4 STORAGE AND PROTECTION

- A. Work, fixtures, equipment, and materials shall be protected at all times. The Contractor shall make good damage caused, whether directly or indirectly, by the workmen. Work shall be properly protected to prevent destruction or damage. Pipe openings shall be closed with caps and plugs during installation. Fixtures and equipment shall be tightly covered and protected against dirt, water, chemical, and mechanical injury.
- B. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weathertight enclosures.
 - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.

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C. Exterior Storage:

1. Store fabricated products above the ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
2. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

D. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.

E. Protection After Installation:

1. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.

3.5 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.

1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

3.6 CLEANING

A. Contractor shall be responsible for keeping the premises free of shipping cartons, crates, material scrap, pipe cuttings, etc. related to his work. Floors shall be protected with leakproof pans where pipe cutting or threading operations are in progress.

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- B. Prime coated equipment, insulation, piping, and pipe covering shall be left dust-free where painting is not required. Thorough cleaning shall be done where painting is required.
- C. Factory finished painted equipment shall be washed with mild soap and water and left in first class condition, entirely free of stains or streaks. Abrasive materials shall not be used.
- D. Plumbing fixtures shall be cleaned with mild soap and water containing a disinfecting agent. Trim handles shall be set at same angle and trim shall be polished. Aerators shall be removed, cleaned and reinstalled after piping has been cleaned and disinfected. Pop-up wastes shall be checked for proper operation.
- E. Sumps, pits, trenches, manholes, catch basins, and floor drains shall be cleaned and left free of foreign material.

3.7 ELECTRICAL REQUIREMENTS

- A. Except as otherwise detailed or specified, all electrical devices, apparatus, etc., furnished in this Division, but which are not integral with the equipment served, will be installed under Division 16 Electrical.

3.8 EQUIPMENT CONNECTIONS

- A. Contractor shall connect equipment and/or fixtures requiring piping or plumbing connections.
- B. Equipment not particularly specified in this Division of the specification is either specified under other Divisions of these specifications, or furnished by the Owner: Plumbing work in connection therewith is to be included under this Division unless otherwise indicated. Contractor shall carefully examine drawings and other Divisions of the specifications and shall provide roughing-in, including traps, to connect this equipment to the piping or plumbing system, and leave ready for use and operation, with stops, supplies, etc.
- C. Connections to equipment shall be in accordance with shop drawings to be furnished by the equipment supplier.

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3.9 COMPLETION OF WORK

A. Plumbing Fixture Caulking:

1. Where irregular walls cause gaps between fixture and wall, Contractor shall fill voids by caulking around fixture.

B. Operating Instructions:

1. Printed instructions, installed in suitable frame with glass front which covers operating and maintenance of each major item of equipment, shall be posted at locations designated by Engineer. Bound manuals for equipment operating and maintenance instructions and parts lists shall be turned over to the Owner. Contractor shall carefully instruct Owner's operation man during adjustment and testing period of equipment for each length of time as may be necessary to thoroughly familiarize him with the proper care, operation and maintenance of the equipment.

C. Record Drawings:

1. During construction, the Contractor shall keep an accurate record of deviations between the work as shown on the contract drawings and that which is actually installed. He shall secure a set of blue line prints of the plumbing and mechanical drawings for this purpose, and note changes thereon in red ink, in a neat and accurate manner, thus making a complete record of all changes and revisions in the original design which exist in the completed work. The cost of furnishing above prints and preparing these record drawings shall be included in the contract price by the Mechanical Contractor. When revisions have been shown on these prints to indicate the work as installed, the prints shall be delivered to the Engineer, before final payment.

D. PAINTING OF NEW EQUIPMENT

New equipment painting shall be factory applied or shop applied, and shall be as specified herein, and provided under each individual section.

1. Factory Painting Systems: Manufacturer's standard factory painting systems may be provided subject to certification that the factory painting system applied will withstand 125 hours in a salt-spray fog test, except that equipment located outdoors shall withstand 500 hours in a salt-spray

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fog test. Salt-spray fog test shall be in accordance with ASTM B 117, and for that test the acceptance criteria shall be as follows: immediately after completion of the test, the paint shall show no signs of blistering, wrinkling, or cracking, and no loss of adhesion; and the specimen shall show no signs of rust creepage beyond 0.125 inch on either side of the scratch mark.

The film thickness of the factory painting system applied on the equipment shall not be less than the film thickness used on the test specimen. If manufacturer's standard factory painting system is being proposed for use on surfaces subject to temperatures above 120 degrees F, the factory painting system shall be designed for the temperature service.

2. Painting Systems for Metal Surfaces (Shop or Field Painting): Clean, pretreat, prime and paint metal surfaces (2 coats); except aluminum surfaces need not be painted. Apply coatings to clean dry surfaces. Clean the surfaces to remove dust, dirt, rust, oil and grease by wire brushing and solvent degreasing prior to application of paint, except metal surfaces subject to temperatures in excess of 120 degrees F shall be cleaned to bare metal.

Two finish coats are required. Apply the second coat after the preceding coat is thoroughly dry. Lightly sand damaged painting and retouch before applying the succeeding coat. Color of finish coat shall be aluminum or light gray.

- a. Temperatures Less Than 120 Degrees F: Immediately after cleaning, the metal surfaces subject to temperatures less than 120 degrees F shall receive one coat of pretreatment primer applied to a minimum dry film thickness of 0.3 mil, one coat of primer applied to a minimum dry film thickness of one mil; and two coats of enamel applied to a minimum dry film thickness of one mil per coat.
- b. Temperatures Between 120 and 400 Degrees F: Metal surfaces subject to temperatures between 120 and 400 degrees F shall receive two coats of 400 degrees F heat-resisting enamel applied to a total minimum thickness of 2 mils.
- c. Temperatures Greater Than 400 Degrees F: Metal surfaces subject to temperatures greater than 400 degrees F shall receive two coats

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of 600 degrees F heat-resisting paint applied to a total minimum dry film thickness of 2 mils.

3.10 GUARANTEE OF WORK

- A. Contractor guarantees by his acceptance of the contract that work installed is free from defects in workmanship and/or materials, and that the apparatus will develop capacities and characteristics specified. If, during the period of one year or as otherwise specified from date of certificate of completion, defects in workmanship, material or performance appear, he will, without cost to the Owner, remedy such defects within a reasonable time to be specified in notice from Engineer. In default thereof, the Owner may have such work done and charge cost to Contractor. Equipment guarantees from date of "start-up" or "delivery" will not be recognized.
- B. Comply, also, with the General Conditions and the Supplementary Conditions and the applicable Sections of Division 1 General Requirements.
- C. This Contractor shall service the installation for one year from date of substantial completion. This shall include emergency service and adjustment, with the exception of the oiling of motors and cleaning of filters and screens.

END OF SECTION

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SECTION 15020

BASIC MATERIALS AND METHODS

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.2 WORK INCLUDED

- A. Piping and equipment identification.
- B. Fire and smoke stopping.
- C. Fabricated steel supports.
- D. Painting.

1.3 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this Section to the extent referenced. The publications are referenced to in the text by the basic designation only.
 - 1. American Institute of Steel Construction (AISC).
 - 2. American National Standards Institute (ANSI) Standards.
 - 3. American Society for Testing and Materials (ASTM) Publications.
 - 4. American Welding Society (AWS) Publications.
 - 5. Underwriters' Laboratories, Inc. (UL) Standards.

1.4 SUBMITTALS

- A. Comply with Section 15000, "MECHANICAL GENERAL PROVISIONS".
- B. Submit product data for the following:

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1. Piping and equipment identification.
2. Fire and smoke stopping material.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Piping and Equipment Identification

1. Seton Name Plate Corp.
2. W. H. Brady Co., Signmark Division
3. Communications Technology Corp.

B. Fire and Smoke Stopping Material

1. Dow Corning Corporation.
2. General Electric Company.
3. Nelson, A Unit of General Signal.
4. Chase Technology Corp.

2.2 PIPING AND EQUIPMENT IDENTIFICATION

- A. Pipe markers shall be sub-surface printed plastic, with protective undercoating. Markers shall be permanently curled for snap-on installation and shall identify the pipe contents and direction of flow through 360 degree visibility range. Marker size and letter color and size, shall be in accord with ANSI A13.1. Background color shall be as follows:

1. A/C Condensate Drain - Green.
2. Refrigerant Liquid and Suction - Safety Yellow.
3. Marker wording shall be in accord with legend on drawings. Markers for outdoor installation shall be covered with outdoor grade acrylic plastic.

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2.3 FIRE AND SMOKE STOPPING

- A. Fire and smoke stopping material shall be a two-part silicone foam or a one-part putty, UL classified, with an HF-1 rating in accord with UL94 and a Class 1 flame spread in accord with ASTM E84. Material shall be suitable for penetration seals through fire-rated floors and walls when tested in accord with ASTM E119. Material shall not melt or soften at high temperatures, shall be suitable for direct outdoor and ultraviolet exposures, shall cure to give a tight compression fit, and shall not produce toxic fumes. Material, when heated, shall expand to fill and hold penetration closed where burn out of cable insulation, ATC tubing, etc. occurs.
- B. Where fire and smoke stopping material does not meet ASTM E84 25/50 flame spread/smoke developed rating, provide 14 gauge metal collar around pipe or duct where penetrating walls and floors in air plenums and air shafts. Provide minimum 1 inch deep neck on collar for attaching to pipe or duct. Neck for pipe collar shall be attached to collar with continuous weld. Neck and collar for duct shall be formed from angle with welded corners. Neck shall extend past sleeve minimum 1 inch all around. Provide collar for each side of wall or floor penetration. Collar may be omitted where permanent damming material meeting ASTM E84 for 25/50 flame spread/smoke developed rating is used and left in place.

2.4 PAINT

- A. Prime and finish paint is provided under DIVISION 09 - FINISHES, except as specified.
- B. All equipment shall be furnished with a factory-applied galvanized, prime paint, or finish paint finish. Touch-up damaged surfaces of equipment immediately.
- C. Paint for galvanized surfaces shall be zinc chromate.
- D. Paint wooden mounting backboards with two coats of gray enamel prior to making attachments to the board.
- E. For quality control refer to DIVISION 09 - FINISHES.

2.5 FABRICATED STEEL SUPPORTS

- A. Steel angles, channels, and plate shall be in accord with ASTM A36.

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- B. Bolts, including nuts and washers, used for fabricating steel members shall be in accord with ASTM A325.
- C. Welding of steel members shall be in accord with AWS D1.1.
- D. Steel members, including fasteners, exposed to weather shall be galvanized.

PART 3 - EXECUTION

3.1 GENERAL

- A. Installation of materials and equipment shall be in accord with the manufacturer's written instructions, except as specified.

3.2 PIPING AND EQUIPMENT IDENTIFICATION

- A. Install pipe markers adjacent to each shutoff valve, at each branch connection, at equipment, on each side of wall, floor, and ceiling penetrations, where entering and leaving underground areas, and at intervals not more than 40 feet on horizontal and vertical pipe runs.
- B. In mechanical equipment rooms and equipment areas, install pipe markers adjacent to each piece of equipment, on each side of wall, floor, and ceiling penetrations, and at intervals not more than 20 feet on all pipe runs.

3.3 FIRE AND SMOKE STOPPING

- A. Fire and smoke stopping is required in the following locations:
 - 1. Where exposed and concealed horizontal pipes, tubes, and wires penetrate fire rated walls, shaft walls, and smoke barriers.
 - 2. Where exposed and concealed vertical pipes, tubes, and wires penetrate rated and non-rated floors.
 - 3. Where exposed and concealed horizontal ducts penetrate fire rated walls, shaft walls, and smoke barriers, except where fire or smoke dampers are installed in ducts.
 - 4. Where exposed and concealed vertical ducts penetrate rated and non-rated floors, except where fire or smoke dampers are installed in ducts.

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- B. Fill annular space between pipe and sleeve, or between duct and sleeve, with approved material. Depth of material shall be in accord with laboratory tests for 1, 2, or 3 hour rated assemblies.
- C. Damming material may be temporary non-fire approved, or permanent fire-approved. Where permanent fire-approved damming material is used depth of fire and smoke stopping material may be decreased in accord with manufacturer's recommendations. Temporary damming material shall be removed after installation of fire and smoke stopping material.
- D. Seal all gaps or voids in cured foam with material to match the fire and smoke stopping material.
- E. Trim excess cured foam from around all openings and leave smooth, flush surface.
- F. Position metal collar on pipe or duct penetrating floors or walls in air plenums and air shafts. Secure neck of collar to duct with screws, and to pipe with metal draw band.

3.4 PAINTING

- A. Remove all dirt, rust, scale, grease, pipe dope, solder flux, and welding slag from all surfaces to be painted.
- B. Paint immediately, under this DIVISION, all damaged galvanized surfaces, including welds. Paint galvanized metal surfaces behind grilles with two coats of flat black paint.
- C. Apply rust inhibitive primer to ferrous surfaces of shop fabricated steel supports.

3.5 FABRICATED STEEL SUPPORTS

- A. Fabricated steel supports may be shop or field-fabricated, and shall be in accord with details on drawings or as required.
- B. Steel members shall be saw cut, with corners ground smooth, and shall be assembled with welded or bolted connections at Contractor's option. Connections shall be in accord with specified AISC Publications.

3.6

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PLACING OF EQUIPMENT

- A. Coordinate setting of equipment with the requirements of other trades so as to avoid conflicts and to insure compatibility. Equipment shall not block access for installation of other equipment.
- B. Set base mounted equipment on permanent and finished supports. Temporary support, if any, shall be removed prior to making final pipe, duct, or electrical connections to equipment.

END OF SECTION

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SECTION 15671

DUCTLESS SPLIT SYSTEMS

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.2 WORK INCLUDED

- A. Ductless split systems (indoor unit and outdoor unit)

1.3 QUALITY ASSURANCE

- A. Conform to the following standards:

- 1. UL
- 2. ARI

1.4 SUBMITTALS

- A. Submit shop drawings and product data in accordance with Section 15000, MECHANICAL GENERAL PROVISIONS.
- B. Submit product data including certified performance data at specified design conditions; complete dimensional data on the indoor unit and outdoor unit; control and wiring diagrams, pipe connection sizes.
- C. Submit manufacturer's installation instructions.

PART 2 - PRODUCTS

2.1 GENERAL

- A. System capacity shall be as scheduled on the drawings.
- B. System shall have a minimum 13 SEER.

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2.2 OUTDOOR UNIT

A. UNIT CASING

1. Outdoor units will be designed for outdoor application and shall provide complete protection for all components and controls. Unit casing shall be capable of withstanding 500-hour salt spray test.
2. Casings will have removable panels to provide complete access to compressor, controls, condenser fan, motor and drive.
3. The unit will ship complete in one section as a factory assembly.
4. All exposed surfaces of the unit casing will be of galvanized steel, phosphatized for maximum paint adhesion and finished with an air-dry paint coating.

B. COMPRESSOR-MOTOR

1. Compressor shall be scroll or reciprocating of the hermetic type, direct driven 2700 RPM and designed for air-cooled operation. Lubrication shall be manufacturer's standard system.
2. Compressor shall have overcurrent and thermal protection.
3. Each compressor shall be equipped with a crankcase heater factory sized to control oil dilution during shutdown.
4. Provide 5 year warranty on compressor.

C. CONDENSING SECTION

1. Condenser coil will be of seamless copper tubing mechanically bonded to configured aluminum fins.
2. A liquid accumulator and subcooling circuit will be included as a standard part of the condensing section.
3. Unit will be equipped with a backseating liquid line service access valve.

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4. Condenser coils should be factory tested at 450 psig air pressure and vacuum dehydrated.
5. Condenser fans shall include safety guards, and be statically and dynamically balanced. Fan motors shall have thermal overload protection and shall be furnished with permanently lubricated bearings. All exposed fan and shaft surfaces weatherproofed.
6. Unit shall be provided with a low ambient package that shall include a low ambient controller, evaporator freeze thermostat, isolation relay and other accessories as recommended by the manufacturer.
7. Provide manufacturer's "Sea Coast" coating on the coils. Coating shall be phenolic or other corrosion resistant system suitable for applications in the marine environment. Coating shall be factory applied, after market applications will not be acceptable.

D. CONTROLS

1. The unit controls shall be factory mounted and wired within the outdoor unit casing with an access panel for easy access.
2. The microprocessor shall control the following:
 - a. Compressor anti-recycling protection. Provision shall prevent restarting after shutdown before a safety interval, as determined by the manufacturer. Provision shall be included for fully unloaded start-up.
 - b. Protection against compressor continuously cycling on low pressure control due to low refrigerant charge.
 - c. High pressure switch.

2.3 INDOOR UNIT

- A. Cabinet shall be constructed of galvanized steel panels and coated with baked enamel finish. Lining shall be 1/2" thick minimum conforming to NFPA-90A requirements. Access panels shall be removable for access to filter, coil, electric heater, and fan. Access shall be from the same side as the piping connections. Fasteners shall be manufacturer's standard.

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- B. Fans shall be centrifugal, forward-curved, double width, double inlet type and shall be both statically and dynamically balanced.
- C. Fan motors shall be two-speed or three-speed with integral thermal overload protection.
- D. Refrigerant coil shall be grooved copper tubes with mechanically bonded aluminum fins. Provide insulated drain pan under refrigerant coil. Drain pan shall have brass drain connections. Indoor unit shall have sweat connections for refrigerant liquid and suction piping.
- E. Motor shall be approved by an acceptable testing agency.
- F. Factory supplied filter shall be cleanable and shall require no tools for removal.
- G. Unit shall have single point electrical connection and shall be provided with a control transformer.

2.4 REFRIGERANT COMPONENTS

- A. Refrigerant system shall include liquid line solenoid valve, biflow filter dryer, biflow thermal expansion valve and a safety relief device. Refrigerant shall be R-410A. Outdoor unit shall be provided with brass service valves.
- B. Refrigerant package shall be copper tubing with an insulated suction line.

2.5 THERMOSTAT

- A. Provide manufacturer's thermostat.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide initial charge of refrigerant and oil.
- B. Install in accordance with manufacturer's written instructions. Systems with long-line refrigerant piping runs shall be provided as recommended by the manufacturer for this application.
- C. Refrigerant lines shall be sized as recommended by the equipment manufacturer to meet the scheduled capacities.

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3.2 SCHEDULE: See schedule on drawings.

END OF SECTION

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SECTION 16010

ELECTRICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The General Conditions, Supplementary General Conditions, and Special Conditions of this Contract form a part of this Division of Specification.
- B. This section forms a part of all sections under Division 16 Electrical.
- C. Requirements herein augment or clarify articles specified under aforementioned General and Special Conditions.

1.2 QUALIFICATIONS FOR BIDDERS

- A. Before submitting bid, visit the site and examine all adjoining existing equipment and space conditions on which work is in any way dependent, for the best workmanship and operation according to the intent of specifications and drawings. Report to the Engineer any condition which might prevent the installation of the equipment in the manner intended.

1.3 CODES AND STANDARDS

- A. Latest effective publications of following standards, codes, etc., as they apply, form part of these specifications as if were written fully herein and constitute minimum requirements. Minimum requirements shall not relieve the Contractor of the responsibility of furnishing and installing higher grade materials and workmanship than herein specified. The following will be referred to throughout in abbreviated forms.
 - 1. National Electrical Code, (NFPA 70) (NEC)
 - 2. Standard Rules of Institute of Electrical and Electronic Engineers (IEEE)
 - 3. Rules and Regulations of Local Electric Utility Company
 - 4. Applicable Standards of the National Electrical Manufacturer's Association (NEMA)

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5. Applicable Standards of the American National Standards Institute (ANSI)
6. Applicable Local Codes
7. Virginia Uniform Statewide Building Code 2003
8. Applicable Standards and Lists of the Underwriter's Laboratories, Inc. (UL)
9. Applicable Standards of the National Fire Protection Association (NFPA)
10. International Building Code (IBC) 2003
11. The Americans with Disabilities Act (ADA)
12. International Electrical Testing Association (NETA)

1.4 SCOPE OF WORK

- A. Provide all work required for this Division including all labor, materials, equipment, appurtenances and services to provide complete electrical systems as shown on the drawings and specified in this Division of the specifications. The word "Provide" shall mean "Furnish and Install Complete and Ready for Use". The work includes, but is not limited to the following:
 1. Interior and exterior electrical lighting system including fixtures, lamps, time switches, photoelectric cells, contactors and other control devices and equipment.
 2. Power wiring system, including outlets, receptacles, switches, wire, conduit, junction boxes, panelboards, switchboards and new electric service.
 3. Disconnect switches and power wiring up to and including motor connections for all equipment provided under other Divisions of this specification shall be included in this Division. Where manual motor control switches for single phase motors are indicated, they shall be provided and wired complete under this Division. Motor controllers and motor starters furnished under other Divisions shall be set in place and connected to source and load under this Division. In general, motors will

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be provided with the equipment they drive and are not part of this work under this Division, except that they shall be connected hereunder.

4. System of cables, conduits, cabinets and outlets for telephone, computer and other communication systems.
5. Fire Alarm System and control center.

B. The following work is not included in this Division:

1. Heating, ventilating, and air conditioning equipment and all associated motors and magnetic motor starters.
2. Control, interlock, and internal equipment wiring regardless of voltage.
3. Terminals, instrument wiring, and instruments for telephone, computer and other communication systems unless specifically addressed by other sections of the specification.

1.5 DRAWINGS AND SPECIFICATIONS

- A. The drawings are diagrammatic and indicate the general extent, character and arrangement of equipment, fixtures and conduit and wiring systems. If any departures from the contract drawings are deemed necessary, submit details of such departures and the reasons therefore as soon as practicable after award of contract to the Engineer for approval. Make no such departures without prior written approval of the Engineer.
- B. It is the intention of these specifications and drawings to fully cover all work and materials for a complete, first-class electrical installation, and any devices such as pull boxes and disconnect switches, usually employed in this class of work, though not specifically mentioned or shown on the drawings or in this specification, but which may be necessary for the satisfactory completion of the work, shall be furnished and installed by the Contractor as a part of his total work under this Division. Consult the specifications and drawings of all other trades and perform all electrical work required therein. Cooperate with all other contractors or subcontractors to furnish complete workable systems.
- C. In case of conflicting information on the drawings and/or in the specifications, the proper interpretation shall be made by the Engineer.

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- D. Disagreements occurring between trades covering various phases of the work shall be referred to general Contractor for final decision.
- E. Changes and additions to scope of the work under this contract shall be submitted to the Engineer and his written approval obtained before proceeding with the changed work.
- F. During construction, the Electrical Subcontractor shall keep an accurate record of all deviations between the work as shown on the contract drawings and that which is actually installed. He shall secure a set of blue line prints of the electrical drawings for this purpose, and note changes thereon with red marks, in a neat and accurate manner, thus making a complete record of all changes and revisions in the original design which exist in the completed work. The cost of furnishing above prints and preparing these record drawings shall be borne by the subcontractor, and shall be included in the contract price. When all revisions have been shown on these prints to indicate the work as finally installed, the prints shall be delivered to the Engineer, before final payment.

1.6 PERMITS, INSPECTION AND TESTS

- A. The right is reserved to inspect and test any portion of the installation/equipment during the progress of its erection. Test all wiring for continuity and grounds before connecting any fixtures or devices. Perform insulation resistance tests on wiring #6 or larger. Test the entire system when the work is finally completed to insure that all portions are free from short circuits and grounds. Provide all equipment necessary to conduct the above tests.
- B. Secure and pay for all required permits and inspections. Inspection certificates from local authorities having jurisdiction shall be delivered to the Owner before final payment.

1.7 SUBMITTALS

- A. Submit Shop Drawings, Product Data and Samples within thirty (30) days of award of contract and in accordance with the General Conditions and Supplementary Conditions. Review of submittals by the Engineer and any associated action taken by the Engineer does not relieve the contractor of any requirements set forth by the contract documents. Submittals are required for the following items if and only if those items are specified herein.

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1. Circuit Breakers
2. Transformers
3. Lighting Fixtures
4. Lighting Control System
5. Back-up Power System
6. Fire Alarm System
7. Any Special Systems as specified herein (i.e. Access Control, CCTV, etc.)

B. Submittals shall contain:

1. The date of submission and of any previous submissions.
2. The project title and number.
3. Contract or project identification.
4. The names of:
 - a. Contractor.
 - b. Supplier.
 - c. Manufacturer.
5. Identification of the product, and specification section.
6. Field dimensions, clearly identified as such.
7. Relation to adjacent or critical features or materials.
8. Applicable standards.
9. Identification of deviations from Contract Documents.
10. Identification of non-complying features and reason for the non-compliance. The reason shall be specific in nature.

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11. Identification of revisions on resubmittals.
12. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and of Contract Documents.

C. SUBSTITUTIONS

1. For a period of 10 days after Contract date, Engineer will consider written requests from Contractor for substitution of products.
2. Submit a separate request for each product, supported with complete data, with drawings and samples as appropriate, including:
 - a. Comparison of the proposed substitution with that specified.
 - b. Changes required elsewhere because of the substitution.
 - c. Effect on the construction schedule.
 - d. Cost comparison of the substitution and product specified.
 - e. Availability of maintenance service, and replacement parts.
3. The Engineer shall be the judge of the acceptability of the proposed substitution.
4. A request for a substitution constitutes a representation that the Contractor:
 - a. Has investigated the proposed product and determined that it is equal to or superior in all respects to that specified.
 - b. Will provide the same warranties or bonds for the substitution as for the product specified.
 - c. Will coordinate the installation of an accepted substitution into the work, and make such other changes as may be required to make the work complete in all respects.

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- d. Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.

PART 2 - PRODUCTS

2.1 MANUFACTURING STANDARDS

- A. Materials shall be new and approved and labeled by UL wherever standards have been established by that agency. Defective equipment or equipment damaged in the course of installation or test shall be replaced or repaired in a manner meeting the approval of the Engineer. Materials to be furnished under this specification shall be the standard products of manufacturers regularly engaged in the production of such equipment and shall be the manufacturer's latest standard design. All items of the same type and rating shall be identical.

2.2 TRADE NAMES

- A. Unless specifically identified otherwise, manufacturers' names and catalog numbers indicated herein and on the drawings are not intended to be proprietary designations. They are to indicate general type and quality of materials and equipment required. Equipment and materials by other manufacturers which in the opinion of the Engineer are of equal quality and which will produce the same results with regard to both their ability to perform the required technical functions as well as to their appearance in the specific location on this project will be considered.

2.3 MOTORS AND EQUIPMENT

- A. All motors shall have disconnecting means, controller and thermal overload protection. Three phase motors shall have power loss and phase outage protection features.
- B. Provide motors, controllers, integral disconnects, and contactors with their respective pieces of equipment. [Combination motor controllers and disconnect switches shall be provided under this division of the Specifications.] Motors, controllers, integral disconnects, and contactors shall conform to the requirements defined under the electrical provisions of the specifications. Extended voltage range motors shall not be permitted. Control voltage for controllers and contactors shall not exceed 120 volts nominal. When motors and equipment furnished are larger than sizes indicated, the cost of additional electrical service and related work shall be included under the section that specified that motor or

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equipment. Where fuse protection is specifically recommended by the equipment manufacturer, provide fused switches in lieu of non-fused switches indicated.

- C. Provide internal wiring for components of packaged equipment as an integral part of the equipment. Provide power wiring and conduit for field-installed equipment under the electrical provisions of the contract. Control wiring and conduit shall be provided under the section specifying the associated equipment. Wiring and conduit for power systems and control systems shall conform to the requirements defined under the electrical provisions of the specifications.

2.4 TEMPORARY ELECTRICAL SERVICE

- A. Reasonable amounts of electricity will be made available to the Contractor for the project. The Contractor shall be responsible for extending the electricity to the specific required locations within the project.

2.5 GROUNDING

- A. The entire electrical system, including equipment frames, conduit, switches, controllers, wireways, neutral conductors, and all other such equipment shall be permanently and effectively grounded in accordance with the NEC. Ground rods shall be copper clad steel, 3/4" diameter by 10'-0" long. Grounding of each transformer secondary shall be provided and each shall be considered as a separate service ground. Provide a separate ground conductor in all branch circuit conduits sized in accordance with the N.E.C. Provide minimum #6 ground conductor in conduit from the building main service ground to the telephone backboard.

PART 3 - EXECUTION

3.1 SCHEDULE OF WORK

- A. The schedule of the electrical work shall be arranged to suit the progress of work by the other trades and shall in no way retard progress of construction of the project.
- B. Work under this Division shall proceed in advance of the work of others whenever possible, eliminating all cutting and patching. When such procedure is impossible, cutting and patching shall be done in an approved manner. Cutting shall not endanger structural integrity in any way. Patching shall exactly match contiguous work. Actual work of cutting and patching of existing surfaces shall be performed by the subcontractor who originally prepared these surfaces, e.g.,

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cutting and patching of masonry wall will be performed by the masonry subcontractor. Costs of such cutting and patching shall be borne by the Electrical contractor. Cutting shall be carefully done and damage to building, piping, wiring or equipment as a result of cutting shall be repaired by skilled mechanics of trade involved.

3.2 STORAGE AND MATERIALS

- A. Space will be assigned to the Contractor by the Owner for the storage of materials. This Contractor will be responsible for the protection and safekeeping of materials, tools, and equipment. All materials and equipment shall be kept in its assigned place until the time of its installation. Excess materials, dirt and refuse shall be promptly removed from the work site.

3.3 LABELING OF EQUIPMENT

- A. All panelboards, cabinets, safety switches, motor disconnect switches, and motor controllers shall be identified by machine engraved laminated plastic designation plates permanently attached thereto with self-tapping screws or rivets. All component parts of each item of equipment or device shall bear the manufacturer's nameplate, giving name of manufacturer, description, size, type, serial and model number and electrical characteristics in order to facilitate maintenance or replacement. The nameplate of a subcontractor or distributor will not be acceptable. Self-adhesive, plastic laminate labels are not acceptable.

3.4 OTHER TRADES

- A. Excavation shall be performed in accordance with the section of these specifications which cover excavating, filling and backfilling.
- B. Concrete work shall be performed in accordance with the section of these specifications which cover concrete.
- C. Painting shall be performed in accordance with the section of these specifications which cover painting. Paint all exposed conduit as well as cabinets and related items which are not supplied with a factory finish. Touch up all factory finishes damaged during installation or by adjacent construction work.

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3.5 COORDINATION

- A. Cooperate and coordinate efforts with all Contractors on the project. This is especially important in determining exact locations of all switches, receptacles and lighting fixtures. Any cost incurred which in the opinion of the Engineer, could have been avoided by this step shall be the responsibility of the Contractor. Coordinate switch locations with thermostats, control switches, etc.
- B. Carefully check space requirements with the other subcontractors to insure that electrical equipment can be installed in the spaces allotted for them. Consult all applicable drawings for details. Where interferences occur and work must be relocated, relocate without additional cost.
- C. No conduit, outlet box, conduit stub-up, or any other electrical devices shall be installed until the exact location has been determined by the coordinated effort of all Subcontractors and other parties concerned. Any relocating of devices or cutting or patching which becomes necessary due to improper coordination shall be done at this Contractor's expense.
- D. Determine electrical requirements of other Divisions in order to fully understand wiring, and provide as required for complete and satisfactory operation of project. Make connections for other Divisions where indicated.
- E. Obtain approved shop drawings showing wiring diagrams, connection diagrams, roughing-in and hookup details, from other involved contractors for all equipment and comply therewith.

3.6 GUARANTEE OF WORK

- A. Contractor guarantees by his acceptance of the contract that all work installed is free from any and all defects in workmanship and/or materials, and that the apparatus will develop capacities and characteristics specified, and that if, during the period of one year or as otherwise specified, from date of certificate of completion and acceptance of the work any such defects in workmanship, material or performance appear, he will, without cost to the Owner, remedy such defects within a reasonable time to be specified in notice from Engineer. In default thereof, the Owner may have such work done and charge cost to Contractor. Equipment guarantees from date of "start-up" will not be recognized.
- B. Comply, also, with the General Conditions and the Supplementary Conditions and the applicable Sections of Division 1 General Requirements.

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- C. Provide service for the installation for one year from date of final acceptance. This shall include all emergency service and adjustment. Provide evidence upon request by the Engineer that a factory authorized local service organization is in existence to service and furnish spare and replacement parts for all equipment under this Division of the specifications.
- D. Compile and assemble and provide all shop drawings, maintenance manuals, operation manuals and warranties in a separated set of vinyl covered, three ring binders, tabulated and indexed for easy reference.

3.7 CLEANING

- A. Clean all light fixtures, lamps and lenses prior to final acceptance. Replace all inoperative lamps.

END OF SECTION

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SECTION 16210

RACEWAY, FITTINGS AND BOXES

PART 1 - GENERAL

- 1.1 Provide raceways and fittings for all electrical and related systems where indicated, specified or required to form continuous raceways from the various service entrances to the various outlets.
- 1.2 Provide each outlet in the raceway system with an outlet box to suit the conditions encountered. Each box shall have sufficient volume to accommodate the number of conductors and conduits entering the box.
- 1.3 All wiring shall be in conduit.

PART 2 - PRODUCTS

2.1 RACEWAYS

- A. Conduit shall be hot-dipped, zinc coated or sherardized rigid steel (RS), intermediate metal conduit (IMC), electrical metallic tubing (EMT), or schedule 40 polyvinyl chloride (PVC).
- B. Flexible conduit shall be galvanized, continuous spiral, single strip type. Flexible conduit shall be covered with PVC jacket in wet or damp locations. Provide suitable fittings with ground connector.
- C. Surface metal raceway system shall be WIREMOLD 2000. It shall consist of an 0.040 inch thick formed steel assembly and an 0.025 inch thick steel, snapping cover plate. Finish shall be gray enamel inside and out over a corrosion-resistant metal treatment undercoat. Surface metal raceway shall be complete with end caps, coupling devices, wire clips, device plates, box connectors, wiring devices and accessories.

2.2 FITTINGS

- A. All conduit entering or leaving outlet, junction or pull boxes, and cabinets and all conduit stubs shall have bushings. Provide insulating bushings where required by NEC.

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- B. Provide expansion fittings with bonding jumper where conduits cross expansion joints.
- C. Fittings for RS and IMC shall be threaded type.
- D. Fittings for EMT shall be threadless, approved for the conditions encountered and may be cast setscrew type or compression type.
- E. Fittings for PVC shall be PVC, primed and glued.
- F. Provide insulating wedge type cable supports in riser conduits in multi-story buildings.

2.3 SLEEVES

- A. All electrical system conduit shall have sleeves where conduit passes through concrete slabs except concrete slabs in contact with grade. All conduit 1 1/4 inch and larger running concealed above ceiling shall have sleeves where the conduit passes through masonry, tile and gypsum wall construction. All conduit running exposed below ceiling or in area without finished ceiling construction and passing through masonry concrete, tile and gypsum wall construction shall be provided with sleeves.
- B. Sleeves shall be constructed of galvanized steel pipe, Schedule 40.
- C. Provide escutcheon plates for all exposed conduit passing through walls, floors and ceilings. Plates shall be nickel plated, of the split ring type of size to match the pipe or conduit. Where plates are provided for conduits passing sleeves which extend above the floor surface, provide deep recessed plates to conceal the sleeves.

2.4 OUTLET BOXES AND JUNCTION BOXES

- A. Outlet boxes shall be pressed steel, electro-galvanized or cadmium plated with clean cut, easily removable knockouts. Except as noted hereinafter minimum size outlet box shall be 4" square, 1 1/2" deep, and shall be increased in dimensions to accommodate conductors, conduits, and devices as required by the NEC. Shallower boxes may be used where required by structural conditions and when specifically approved by the Engineer. Provide suitable plaster-rings to match wall construction and device. Ceiling and bracket outlet boxes shall not be less than 4" octagonal, 1 1/2" deep except that smaller boxes may be used where required by particular fixture to be installed.

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- B. Non metallic outlet boxes may be provided in PVC raceway systems.
- C. Outlet boxes in wet or damp locations shall be cast-metal, threaded hub-type with gaskets.
- D. Outlet boxes in masonry-block or tile walls shall be square-cornered masonry-type with tile type covers.
- E. Junction or pull boxes not over 100 cubic inches in volume shall be standard outlet boxes. Junction boxes over 100 cubic inches in volume shall be constructed of code gage, galvanized sheet steel. Junction boxes shall have removable covers and shall be accessible after completion of buildings.

2.5 CABINETS

- A. Cabinets shall be zinc-coated sheet steel, constructed with interior dimensions not less than those indicated on drawings, arranged for flush or surface mounting as indicated. Removable trim shall be provided with a hinged door and flush latch and lock. Locks shall be keyed same as panelboards.

2.6 ACCESS PANELS

- A. This Contractor shall furnish and General Contractor shall install access doors where required for electrical access, style as necessary for surface in which placed, sized as required, with cylinder lock. Interior doors shall be steel and exterior doors shall be aluminum. Access doors shall have same fire rating as ceiling, walls and/or partitions in which they are to be installed.

PART 3 - EXECUTION

3.1 RACEWAY AND FITTING INSTALLATION

- A. Conduits within building shall be GRS, IMC or EMT unless otherwise noted. Run conduits concealed within finished walls, ceilings and floors where possible, except where indicated on drawings to be run exposed. In addition, conduits may be run exposed in mechanical rooms and spaces with exposed construction when approved by the Engineer. Conduit shall be supported at intervals of not more than 8'. Run exposed conduit parallel or perpendicular to walls, structural members, or intersections of vertical planes and ceiling. Conduit in areas with suspended ceilings shall be located when practicable between the structural system and the ceiling. All conduit to be run under the floor shall be run under

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the slab. Conduit shall not be run in the floor slab. Do not stack conduits beneath slab. Changes in direction of runs shall be made with symmetrical bends or cast metal fittings.

- B. Boxes for metallic raceways shall be cast-metal, hub-type when located in wet locations, when surface mounted on outside of exterior surfaces.
- C. Support conduits by pipe straps, wall brackets, strap hangers, or ceiling trapeze.
- D. Conduit run outside of building shall be buried a minimum of 24" below finished grade.
- E. Do not install EMT outdoors, or underground, or encased in concrete, or in hazardous areas, or in areas subject to severe physical damage.
- F. Do not install PVC in or through fire rated assemblies, in or through any walls, in or through any ceilings, in hazardous areas, in areas subject to severe physical damage, or exposed anywhere in the project.
- G. Conduit run underground, under slab, or within concrete encasement may be polyvinyl chloride (PVC) or RS or IMC conduit protected with 2 coats of bitumastic paint at the Contractor's option, unless another specific type of conduit is indicated. Convert PVC to RS or IMC before rising through floor slab or rising out of soil where conduit will be exposed. Where conduit is to be concealed within a wall, PVC may be stubbed up to the first outlet box or panelboard back-can. All conduit from that point on shall be metallic. Conduit run beneath slab shall be properly suspended from slab such that sub-slab settlement will not adversely affect electrical system.
- H. Flexible conduit shall be used to connect all motors, transformers and all equipment subject to vibration.

3.2 SLEEVE INSTALLATION

- A. Check floor and wall construction and finishes to determine proper length of sleeves for various locations. Make actual lengths to suit the following:
 - 1. Terminate sleeves flush with wall, partitions and ceilings.
 - 2. In areas where conduits are concealed, as in chases, terminate sleeves flush with floor.

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3. In finished areas, where conduits are exposed, extend sleeves 1/2 inch above finished floor, except in rooms having floor drains extend sleeves 1 inch above floor.
- B. Fasten sleeves securely in floors and walls, so that they will not become displaced when concrete is poured or when other construction is built around them. Take precautions to prevent concrete, plaster or other materials being forced into the spaces between conduit and sleeve during construction.
- C. Where sleeves pass through floors or fire rated walls provide proper sealant around conduit to maintain fire rating.

3.3 BOX INSTALLATION

- A. Support boxes for fixtures on suspended ceilings independently of ceiling supports. Fasten boxes and supports with wood screws on wood, with bolts and expansion shields on concrete or brick, with toggle bolts on hollow masonry units, and with machine screws or welded studs on steel. Nail-type nylon anchors may be used in lieu of wood screws, expansion shields, or machine screws. In open overhead spaces, cast boxes threaded to raceways need not be separately supported except where used for fixture support; support sheet metal boxes directly from building structure or by bar hangers. Where bar hangers are used, attach bar to raceways on opposite sides of box, and support raceway with approved-type fastener maximum 24 inches from box. When penetrating reinforced concrete members, avoid cutting reinforcing steel.

END OF SECTION

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SECTION 16220

CONDUCTORS

PART 1 - GENERAL

- 1.1 Provide a complete system of conductors as indicated or necessary to accomplish the required connections. All conductors shall be installed in a neat and workmanlike manner, with care being taken that conductors are not kinked, scarred, or damaged during installation.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND INSULATION

- A. Wire and cable shall be soft drawn, annealed copper with 600 volt insulation. Minimum wire size shall be #12 AWG. Insulation for conductor sizes #12 and #10 shall be type THHN-THWN, THW or RHW for installation in ordinary dry locations and type THWN or RHW-2 for installation in wet locations. Wet locations shall include service conduits, conduit underground, raceways installed in concrete floor slabs in direct contact with the earth and raceways regularly subject to moisture or condensation. Conductors sizes larger than #10 shall have type XHHW-2 insulation. Conductors No. 8 AWG and larger diameter shall be stranded. Conductors No. 10 AWG and smaller diameter shall be solid, except that conductors for remote-control and signal circuits, classes 1, 2, and 3, may be stranded.
- B. Provide a separate ground conductor in all raceways sized in accordance with the N.E.C.

2.2 COLOR CODING

- A. All branch circuit, feeder and control wiring shall be color coded in accordance with NEC. Color shall be integral with sheath for sizes 12 through 8. Provide minimum 1/2 inch wide color coded plastic tape strips for conductors size 6 and larger. Strips shall be placed minimum 6 inches on center in all panelboards, junction boxes, pull boxes, conduit fittings, disconnect switches and anywhere the conductors are accessible and visible. Wire shall be color coded as noted below. All other conductors shall be of other colors. Color schedule shall be as follows:

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208/120 Volt System

Phase A	Black
Phase B	Red
Phase C	Blue
Neutral	White
Ground	Green

2.3 ALUMINUM CONDUCTORS

- A. The use of aluminum conductors is prohibited for use on this project.

2.4 JOINTS AND TERMINATIONS

- A. Leave at least 6 inches of free conductor in each outlet- or junction- box for making up joints and making connections to fixtures, devices or equipment.
- B. For conductors #12 and #10 all fixture and branch circuit joints in junction and outlet boxes shall be made with UL listed pressure type connectors rated at 600 volts and 105 degrees C. Connector body shall consist of a cone-shaped, expandable, square-edged, coil-spring insert, insulated with a color-coded, self-extinguishing nylon shell with two wings placed opposite to each other to serve as a "built-in" wrench. Shell shall be molded of one piece. Connectors shall be IDEAL INDUSTRIES "Wing-Nut" or BUCHANNAN "B-CAP", 3M "SCOTCH-LOK" connectors or equal. Wire #8 and larger shall be joined or terminated with solderless pressure connectors properly taped in layers to form a moisture-tight joint.

PART 3 - EXECUTION

3.1 CONDUCTOR INSTALLATION, GENERAL

- A. Conductors shall be continuous from outlet to outlet, and no splices shall be made except within outlet or junction boxes. Junction boxes shall be provided where required. Home runs may be combined in one conduit, provided all connections are in accordance with NEC requirements and the maximum unbalanced current in the neutral does not exceed the capacity of the conductor. All parallel feeder runs shall be laid out and cut to exact same lengths before pulling into conduits to insure load balance. No additional trimming of parallel conductors will be accepted. Conductors #8 and smaller shall be pulled by hand and without aid of block and tackle or other mechanical device. Only approved equipment for

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pulling conductors shall be used for #6 and larger conductors. Only approved pulling compounds which will in no way damage the insulation on the conductors or hasten its aging may be used to facilitate pulling of wire into conduit. Circuiting shown shall be followed unless specific changes are approved by the Engineer.

- B. Where several feeders pass through a common pull box or junction box, the feeders shall be tagged to indicate clearly their electrical characteristics, circuit number, and panel designation. This same information shall be permanently marked on cover of the box.
- C. All conductors shall be in conduit unless otherwise indicated.
- D. All conductors and cables shall be labeled.

END OF SECTION

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SECTION 16230

WIRING DEVICES

PART 1 - GENERAL

- 1.1 Provide wiring devices complete with all necessary trim rings or wall plates as shown or as required.

PART 2 - PRODUCTS

- 2.1 Wiring devices shall be as manufactured by LEVITON, ARROW-HART, BRYANT, HUBBELL or PASS & SEYMOUR. All wiring devices provided on this project shall be by the same manufacturer and shall be "specification grade".
- A. Local switches shall be single pole, double pole, three way and four way as shown on the drawings, black plastic cup with red plastic cover and ivory plastic handle, back or side wired, 20 ampere, 120-277 volts.
 - B. Duplex convenience receptacles shall be [ivory] [brown] plastic, 20 ampere, 125 volts, 2 pole, 3 wire NEMA and ASA Standard, grounding type.
 - C. Weatherproof receptacles shall be in cast metal box with gasketed, weatherproof, cast-metal cover plate and gasketed cap over each receptacle opening. Caps shall be provided with a spring-hinged flap. Receptacle shall be UL listed for use in "wet locations."
 - D. Ground fault circuit interrupting receptacles shall conform to NEC, shall be UL listed, brown plastic, shall have a "push-to-test" button and visible indication of a tripped condition, and shall detect a current imbalance in device or equipment plugged-in of approximately 5 milliamperes and trip out under that condition.
 - E. Special devices shall be as shown on drawings.
 - F. Device plates shall be satin finished type 302, Alloy 18-8 stainless steel with beveled edges. Plates shall be of one piece type to suit device or devices covered. Sectional plates will not be permitted. Junction boxes in finished areas shall have blank satin finish stainless steel plates as specified above. Telephone outlets in finished areas shall have satin finish stainless steel plates, as specified above, with single bushed hole in center. Plates on finished walls shall be nylon or lexan. Plates shall be same color as receptacle or toggle switch with which they

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are mounted. Screws shall be machine-type with countersunk heads in color to match finish of plate.

PART 3 - EXECUTION

3.1 Devices shall be installed in a rigid manner in outlet boxes. Device plates shall be installed with all four edges in continuous contact with finished wall surfaces without the use of mats or similar devices. Plaster fillings will not be permitted. Plates shall be installed vertically and with an alignment tolerance of 1/16 inch.

3.2 GROUND-FAULT RECEPTACLE TEST

A. Test ground-fault receptacles with a "load" (such as a plug in light) to verify that the "line" and "load" leads are not reversed.

END OF SECTION

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SECTION 16250

SAFETY SWITCHES

PART 1 - GENERAL

- 1.1 Provide safety switches wherever shown and whenever required whether specifically shown or not.

PART 2 - PRODUCTS

2.1 SWITCHES

- A. Safety switches shall be rated at 600 or 240 volts as required for voltage of system with number of poles and current rating as indicated. Switches shall be fused or non-fused type as indicated, NEMA type GD or HD as required, with full cover interlocks and quick-make, quick-break mechanism.
- B. All fused switches shall be provided complete with fuses and shall have horsepower ratings when serving motor loads.

2.2 FUSES

- A. Fuses rated over 600 amperes shall be U.L. Class "L" fuses, and shall have a minimum time delay of 10 seconds at 500% rating. They shall be Littelfuse Type KLP-C time delay fuses or approved equal. All fuses 600 amperes and below shall be true dual-element time delay fuses with separate spring-loaded thermal overload elements in all ampere ratings. All ampere ratings shall be designed to open at 400 degrees Fahrenheit or less when subjected to a non-load oven test. RK-1 fuses shall be Littelfuse fuses, type LLN-RK or LLS-RK. RK-5 fuses shall be Littelfuse "Slo-Blo" fuses, type FLN-R or FLS-R. Fuses shall be sized as indicated on the drawings or as required by the equipment provided, whichever provides maximum protection.

PART 3 - EXECUTION

- 3.1 Switches shall be securely mounted to wall, structure or equipment. Provide miscellaneous accessories for mounting switches, including steel angles or channels where required.

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- 3.2 Spare fuses. At the completion of the project the contractor shall deliver to the Owner (and obtain receipt for) spare fuses of each size and type equal to 20 percent of the number installed but not less than 3 or more than 9 of any size and type.

END OF SECTION

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SECTION 16255

ENCLOSED CIRCUIT BREAKERS

PART 1 - GENERAL

- 1.1 Provide enclosed circuit breakers with ratings as indicated.

PART 2 - PRODUCTS

2.1 CIRCUIT BREAKERS

- A. Circuit breakers shall be molded case type having over-center, tripfree, toggle-type operating mechanisms with quick-make, quick-break action and positive handle indication. Two and three-pole breakers shall be common trip. Each circuit breaker shall have a permanent trip unit containing individual thermal and magnetic trip elements in each pole. The circuit breaker shall be constructed to accommodate the supply connections at either end. Circuit breaker operating handles shall assume a center position when tripped.
- B. Breakers shall have removable lugs. Lugs shall be UL listed for copper and aluminum conductors. Breakers shall be UL listed for installation of mechanical screw type lugs or crimp lugs.
- C. Neutral bars shall be furnished for circuit breakers as indicated. Neutral bars shall be insulated and be groundable for use in service equipment applications. Neutrals shall have same current rating as circuit breaker.

2.2 ENCLOSURES

- A. Enclosures shall be the NEMA type indicated on the plans.
- B. NEMA 1 enclosure shall be furnished with knockouts and shall be fabricated from sheet steel in accordance with UL 98. Enclosures shall be UL listed.
- C. NEMA 4 gasketed watertight enclosure shall be furnished with watertight hubs sized for conduits as shown on plans. Enclosure shall be fabricated from zinc coated steel with epoxy powder coating inside and out. The external operating handle must be an integral part of the box. Enclosure shall have provisions for three padlocks to lock handle in off position. Enclosure shall be UL listed.

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PART 3 - EXECUTION

3.1 CIRCUIT BREAKERS

- A. Circuit breakers shall be securely mounted to wall, structure or equipment. Provide miscellaneous accessories for mounting switches, including steel angles where required.
- B. If at the option of the contractor, aluminum wire or cable is used and the corresponding conduit size is changed, it is the responsibility of the Contractor to select a proper circuit breaker enclosure to accommodate new conduit size and to provide adequate space for training and terminating the aluminum conductors.

END OF SECTION